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MINERAL INDUSTRY SURVEYS

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OSCAR. L. CHAPMAN, Secretary
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For Immediate Release

MINERAL MARKET REPORT
MMS NO. 1808

PHOSPHATE ROCK IN FIRST HALF OF 1949

Total mine production of phosphate rock in the first half of 1949, according to reports of producers to the Bureau of Mines, United States Department of the Interior, was 4,056,168 long tons. Phosphate rock sold or used in the first half of 1949, 4,378,295 long tons, was about one-quarter million tons less than for the corresponding period of 1948. The total value also was less. The average value of the phosphate rock sold or used, however, increased 23 cents a ton from $5.70 in the first half of 1948 to $5.93 in 1949, increases being reported in Tennessee and Montana rock; that of Florida declined slightly. Total stocks in producers hands on June 30, 1949, were 95,000 tons greater than at mid year in 1948, the increase reported for Tennessee more than offsetting declines in the other regions.

In the first half of 1949 phosphate rock was mined in Florida, Tennessee, Idaho, Montana, and Wyoming. Florida was the leading shipper as usual, its marketed production being in this period more than four times that of its nearest competitor, Tennessee. Shipments of Florida land pebble and hard rock declined, the latter markedly; the shipments of soft rock increased slightly. The average values of the shipments of Florida soft rock and hard rock showed increases, whereas there was a slight decrease in that of land pebble. The total value of the shipments of soft rock increased; that of land pebble and hard rock declined. The quantity of Tennessee phosphate rock sold or used in the first half of 1949 was 22,018 tons greater than in the similar period of 1948, and the value was over one million dollars greater. The quantity of Idaho and Wyoming rock sold or used in the first six months of 1949 showed a marked decrease from that of the January-to-June period of 1948, whereas Montana shipments were much larger in 1949.

Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

Salient statistics of the phosphate-rock industry in the United States, January - June, 1948 and 1949

	1948				1949			
	Long tons		Value at mines		Long tons		Value at mines	
	Phosphate rock	P_2O_5 content	Total	Average	Phosphate rock	P_2O_5 content	Total	Average
Production (mined).........	4,797,764	1,559,506	(1/)	(1/)	4,056,168	1,310,530	(1/)	(1/)
Sold or used by producers:								
Florida:								
Land pebble...............	3,479,002	1,165,938	$19,640,528	$5.65	3,280,260	1,101,471	$18,438,384	$5.62
Soft rock.................	34,821	7,061	146,847	4.22	35,782	7,301	154,761	4.33
Hard rock.................	37,328	13,462	283,504	7.59	6,524	2,390	52,110	7.99
Total Florida..........	3,551,151	1,186,461	20,070,879	5.65	3,322,566	1,111,162	18,645,255	5.61
Tennessee 2/..............	680,980	191,194	4,059,578	5.96	702,998	197,381	5,140,198	7.31
Idaho 3/..................	307,295	92,410	1,669,362	5.43	136,119	55,748	998,543	5.37
Montana...................	95,650	30,154	643,090	6.72	166,612	53,027	1,197,571	7.19
Total United States.....	4,635,076	1,500,219	26,442,909	5.70	4,378,295	1,417,318	25,981,567	5.93
Stocks in producers' hands, June 30:								
Florida....................	846,000	277,000	(1/)	(1/)	807,000	268,000	(1/)	(1/)
Tennessee 2/ 4/ 5/.........	385,000	111,000	(1/)	(1/)	567,000	161,000	(1/)	(1/)
Other......................	123,000	36,000	(1/)	(1/)	75,000	23,000	(1/)	(1/)
Total stocks 4/.........	1,354,000	424,000	(1/)	(1/)	1,449,000	452,000	(1/)	(1/)

1/ Figures not available.

2/ Includes brown-rock matrix of sinter-grade and sintered brown rock.

3/ Includes Wyoming.

4/ Virginia included with Tennessee.

5/ Does not include plant stocks of washer-grade matrix.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

For release January 4, 1950.

MINERAL MARKET REPORT
MMS NO. 1809

METAL MINING IN UTAH, 1949 - PRELIMINARY ANNUAL FIGURES

Metal mining in Utah in 1949 was erratic, and during much of the year it lacked the stimuli for outstanding production, according to the Salt Lake Office of the Bureau of Mines, United States Department of the Interior. Yield of gold and silver each dropped 17 percent, copper 15, lead 8, and zinc 5; output of ore dropped 17 percent.

Declines in the output of the five metals in 1949 coupled with lower average prices for base metals brought about a decrease of 23 percent in the value for copper, 18 for lead, 17 for gold, 17 for silver, and 9 for zinc. The value of the five metals in 1949 was $118,930,284, or nearly 21 percent less than the value of $149,763,677 in 1948. Of the State total value in 1949, copper contributed 64 percent, lead 14, gold 9, zinc 8, and silver 5 percent.

Based on reports by operators and on receipts at smelters and United States mints for 10 months of the year and with November and December estimated from other sources of information, preliminary figures for 1949, with comparative figures for 1945-48, are given in the table that follows.

The value of the metals produced in 1949 has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.905+ per fine ounce ($0.905+); copper $0.197 per pound ($0.217); lead, $0.159 per pound ($0.179); zinc $0.128 per pound ($0.133).

MINING

The declines in the production of all five metals in Utah in 1949 were attributable mainly to two factors: The work stoppage at the Utah Copper mine, begun in 1948 and still in effect February 7, 1949, and the sharp drop in prices of base metals, beginning in March. Unstable markets for base metals not only resulted in closing some operations but in curtailing production at others through a reduction of the work-week from 48 to 40 hours.

The number of lode mines producing in the State decreased 30 percent from 118 in 1948 to an estimated 82 in 1949. The 17-percent decline in ore output resulted mainly from the factors mentioned in the paragraph above. Among the larger producers, only the United States & Lark unit, and the Butterfield group, both in the West Mountain (Bingham) district, reported increased tonnages for the year.

The 21,241,000 tons of material treated in 1949 were distributed by classes as follows: Copper ore, 20,200,000 tons; zinc-lead ore, 833,000 tons, gold and silver ores, 175,000 tons; zinc ore and old zinc slag, 22,000 tons; lead ore, 11,000 tons.

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

LEADING DISTRICTS

The West Mountain (Bingham) district in 1949 produced more lead and nearly as much zinc as in 1948, mainly because of continued steady production at the United States & Lark unit and the Butterfield group. District yield of gold, silver, copper, and total ore decreased largely because of the work stoppage early in the year and the reduced work-week later in the year at the Utah Copper mine. Ore treated from the Park City region was only 60 percent of the quantity treated in 1948. This pronounced drop resulted from the slump in base-metal prices, which closed the operations of the Pacific Bridge Co., New Park Mining Co., Silver King Coalition Mines Co., and greatly curtailed the operations of the Park Utah Consolidated Mines Co. The New Park mine was reopened September 15. In the Tintic district, the output of ore was less than in 1948, but production of zinc increased; yield of gold, silver, copper, and lead declined. The West Mountain (Bingham) district produced 88 percent of the State total value in 1949, the Park City region nearly 6, the Tintic district almost 4, and remaining districts 3 percent. Further details on district and State production are shown in the accompanying table.

MILLING AND SMELTING

The Midvale concentrator of the United States Smelting, Refining & Mining Co. operated all year and continued to treat largely zinc-lead ore must of which came from company-owned property in the West Mountain (Bingham) district. The Tooele concentrator of the International Smelting & Refining Co. operated on zinc-lead ore supplied chiefly from shippers in the Tintic district and the Park City region; the copper unit at the concentrator remained idle. The Bauer concentrator of the Combined Metals Reduction Co. operated largely on zinc-lead ore from company-owned or -operated mines in Utah and Idaho.

The Magna and Arthur mills of the Kennecott Copper Corp. were closed until February 7, when work was resumed at the Utah Copper mine; ore treated in 1949 was about 17 percent less than in 1948. The concentrator of the Silver King Coalition Mines Co. at Park City operated until the Silver King mine closed on July 1; only zinc-lead ore from the company mine was treated. The tailing plant of the Pacific Bridge Co. at Park City closed early in May, following a sharp decline in prices of lead and zinc.

The Garfield copper smelter of the American Smelting & Refining Co. reopened shortly after the Utah Copper mine returned to production on February 7. The Murray lead smelter of the American Smelting & Refining Co. closed indefinitely in October because of an insufficient supply of ores and concentrates. The Midvale lead smelter of the United States Smelting, Refining & Mining Co. operated all year and treated lead concentrates, lead ores, and siliceous ores chiefly from company-owned properties in Utah. The Tooele lead plant of the International Smelting & Refining Co. operated all year in conjunction with the company zinc slag-fuming plant and treated zinc-lead ore and old slag, lead ore and concentrates, and zinc ores from both company-owned and custom sources. The slag-fuming plant treated a total of about 108,500 tons of hot current slag, old cold slag, and crude ore in 1949, compared with 127,551 tons in 1948; production was 18,750 tons of zinc fume averaging 76.4 percent zinc and 2,700 tons of lead fume averaging 48.0 percent lead. The International copper smelter at Tooele remained idle.

Work was pushed rapidly on the construction of the $16,000,000 copper refinery of the Kennecott Copper Corp. at Garfield.

GOLD

The majority of the larger gold-producing properties in Utah reported declines in output of the metal in 1949; exceptions were the Park Utah Consolidated mine and the Daly No. 1 dump, both in the Park City region, and the Butterfield group in the West Mountain (Bingham) district.

Of the total gold in 1949, copper ore furnished 85 percent, zinc-lead ore 12, other base-metal ores 1, and gold and silver ores 2 percent.

As usual, the Utah Copper mine lead State gold producers by a wide margin, followed by the United States & Lark unit, New Park property, Park Utah Consolidated mine, Chief Consolidated property, Butterfield group, Daly No. 1 dump, Calumet mine, and Eureka Lilly mine. These nine producers, each having an output of more than 1,000 ounces of recoverable gold, supplied 98 percent of the State gold.

SILVER

With the exception of the Butterfield group and the Daly No. 1 dump, all of the larger producers of silver in Utah reported smaller outputs in 1949 than in 1948. Decreases were especially large at the Utah Copper, Park Utah Consolidated, and Silver King Coalition mines.

Utah properties that produced more than 100,000 ounces of recoverable silver each in 1949 were as follows: Utah Copper mine, United States & Lark unit, Chief Consolidated property, New Park property, Butterfield group, Daly No. 1 dump, Park Utah Consolidated property, Silver King mine, and Calumet mine. These nine properties contributed 90 percent of the State silver in 1949.

Zinc-lead ore, zinc ore, and lead ore together supplied 56 percent of the total silver in 1949, copper ore 32, and gold and silver ores 12 percent.

COPPER

Following a work stoppage at the Utah Copper mine than began on October 24, 1948, operations were resumed at the mine on February 7, 1949. The loss from the shut-down during the 1949 period is estimated to have been more than 60,000,000 pounds of recoverable copper. On June 1, the mine changed its work-week from 48 hours to 40 hours, thereby bringing about a further reduction in copper production. These two factors reduced the output of copper at the mine in 1949 about 15 percent below that in 1948. Among other Utah properties, only the United States & Lark unit at Bingham produced more than a million pounds of recoverable copper in 1949.

LEAD

Because of a reduced work-week, followed by stoppages at three of the larger lead producers and serious curtailment at the fourth in the Park City region, output of lead for the year declined markedly at the properties of the New Park Mining Co., Park Utah Consolidated Mines Co., Silver King Coalition Mines Co., and Pacific Bridge Co. The Calumet mine in the Rush Valley district also produced less of the metal than in 1948. Counterbalancing this loss in part were increases in lead yield from the United States & Lark unit, Chief Consolidated property, Butterfield group, and Hidden Treasure mine. The leading lead producers in 1949 were the United States & Lark unit, Chief Consolidated property, Butterfield group, Park Utah Consolidated property, New Park property, Calumet mine, Silver King mine, and Hidden Treasure mine. These eight properties produced 92 percent of the State total lead.

ZINC

Compared with 1948, zinc made the best record of any of the five metals in Utah in 1949. Output of the metal declined slightly at the United States & Lark unit and appreciably at the Tooele old-slag dump, New Park property, Silver King mine, and Pacific Bridge property. Increases were reported from the Butterfield group, Chief Consolidated property, Park Utah Consolidated property, and the Hidden Treasure mine. Leading producers of the metal in 1949 in order were the United States & Lark unit, Chief Consolidated property, Park Utah Consolidated property, New Park property, Butterfield group, Tooele old-slag dump, Calumet mine, Hidden Treasure mine, and Pacific Bridge property. These 10 producers contributed 96 percent of the State total zinc.

Mine production of gold, silver, copper, lead, and zinc in Utah in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January----------------	3,075	271,595	120	3,420	2,965
February---------------	15,190	367,320	7,640	3,030	2,535
March------------------	32,865	689,880	20,700	5,410	4,450
April------------------	33,005	692,215	20,170	5,530	4,540
May--------------------	30,205	673,500	18,350	5,545	4,060
June-------------------	27,980	651,210	18,080	5,295	4,145
July-------------------	25,855	543,330	17,520	3,495	2,410
August-----------------	25,765	553,500	18,425	3,615	2,470
September--------------	28,980	585,450	17,240	4,190	2,945
October----------------	26,880	545,000	17,885	3,865	2,775
November---------------	27,400	567,000	17,900	4,000	2,950
December---------------	28,550	569,000	18,040	4,190	3,120
Total: 1949-------	305,750	6,709,000	192,070	51,585	39,365
1948-------	368,422	8,045,329	227,007	55,950	41,490

Mine production of gold, silver, copper, lead, and zinc in Utah, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945	279,979	$9,799,265	6,106,545	$4,342,432	226,376	$61,121,520
1946	178,533	6,248,655	4,118,453	3,327,710	114,284	37,028,016
1947	421,662	14,758,170	7,780,032	7,040,929	266,533	111,943,860
1948	368,422	12,894,770	8,045,329	7,281,429	227,007	98,521,038
1949	305,750	10,701,250	6,709,000	6,071,984	192,070	75,675,580

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945	40,817	$7,020,524	33,630	$7,734,900	$90,018,641
1946	30,711	6,694,998	28,292	6,903,248	60,202,627
1947	49,698	14,313,024	43,673	10,568,866	158,624,849
1948	55,950	20,030,100	41,490	11,036,340	149,763,677
1949	51,585	16,404,030	39,365	10,077,440	118,930,284

Mine production of gold, silver, copper, lead, and zinc in Utah and in the chief mining districts of Utah, 1948-49, in terms of recovered metals

District	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)	Total value
West Mountain (Bingham) district							
1948	24,889,134	332,588	4,694,674	225,225	30,672	22,077	$130,490,268
1949	20,690,000	278,850	4,238,000	190,750	31,860	21,980	104,509,214
Park City region							
1948	506,671	19,087	1,703,864	597	12,670	10,320	9,749,907
1949	309,000	18,700	1,069,000	470	8,470	8,355	6,639,519
Tintic district							
1948	175,897	11,007	1,123,460	501	5,970	3,680	4,735,701
1949	151,000	5,090	867,000	260	5,943	5,091	4,258,439
Remaining districts							
1948	170,209	5,740	523,331	684	6,638	5,413	4,787,801
1949	91,000	3,110	535,000	590	5,312	3,939	3,523,112
Total, Utah							
1948	25,741,911	368,422	8,045,329	227,007	55,950	41,490	149,763,677
1949	21,241,000	305,750	6,709,000	192,070	51,585	39,365	118,930,284

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
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FOR IMMEDIATE RELEASE
January 4, 1950

Mineral Market Reports
M. M. S. No. 1810

METAL MINING IN MONTANA, 1949 - PRELIMINARY ANNUAL FIGURES

None of the five major nonferrous metals in Montana in 1949 succeeded in equaling its 1948 yield, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. Lead, with the best record, dropped 3 percent in quantity, copper almost 8, silver and zinc 14 each, and gold 36 percent; tonnage of ore treated was nearly 20 percent less than in 1948.

The principal factor responsible for this marked decline was the pronounced drop in base-metal prices, beginning in March and continuing well into summer, although generally unfavorable economic conditions resulted in decreases in gold output at a number of placers and gold lodes. The value of gold in 1949 was 36 percent less than in 1948, silver 14, copper 16, lead 14, and zinc 17 percent. Total value dropped 17 percent from $56,422,609 in 1948 to $46,954,918 in 1949. Of the total value in 1948, copper contributed 45 percent, zinc 28, lead 12, silver 12, and gold 3 percent.

Based on reports by operators and receipts at smelters and United States Mints for 10 months of the year, and with November and December estimated from other sources of information, preliminary figures for 1949 with comparative figures for 1945-48 are given in the accompanying table. The value of the metals produced in 1949 has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.905+ per fine ounce ($0.905+); copper, $0.197 per pound ($0.217); lead, $0.159 per pound ($0.179); zinc, $0.128 per pound ($0.133).

Mine production of gold, silver, copper, lead, and zinc in Montana, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945........	44,597	$1,560,895	5,942,070	$4,225,472	88,506	$23,896,620
1946.......	70,507	2,467,745	3,273,140	2,644,697	58,481	18,947,844
1947.......	90,124	3,154,340	6,326,190	5,725,202	57,900	24,318,000
1948.......	73,091	2,558,185	6,930,716	6,272,648	58,252	25,281,368
1949.......	46,700	1,634,500	5,993,000	5,423,968	53,850	21,216,900

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945................	9,999	$1,719,828	17,403	$4,002,690	$35,405,505
1946................	8,280	1,805,040	16,770	4,091,880	29,957,206
1947................	16,108	4,639,104	45,679	11,054,318	48,890,964
1948................	18,411	6,591,138	59,095	15,719,270	56,422,609
1949................	17,825	5,668,350	50,825	13,011,200	46,954,918

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

MINING

Although forcing some smaller properties to close, declining base-metal prices resulted mainly in curtailment of operations. At the Butte properties of the Anaconda Copper Mining Co. a five-day work-week went into effect early in June, underground mining was reduced, shipments of zinc-lead dump ore ceased, and work on the Greater Butte Project was temporarily suspended. However, at mid-November copper mining at the Belmont mine, shipping of zinc-lead dump ore, and sinking of the Kelly shaft were resumed.

Ore produced in Montana in 1949 is estimated at 2,427,000 tons — a decrease of nearly 20 percent from the 3,020,307 produced in 1948. Of the 1949 tonnage, about 51 percent was copper ore, 45 percent was zinc-lead, zinc, and lead ores, and 4 percent was gold and silver ores.

MILLING AND SMELTING

The copper concentrator, zinc concentrator, copper smelter (all at Anaconda), and the two electrolytic zinc plants (at Anaconda and Great Falls) of the Anaconda Copper Mining Co. operated throughout the year. In 1949 the zinc plants treated 448,500 tons of zinc concentrates from many sources, containing 473,700,000 pounds of zinc, compared with 511,119 tons containing 543,164,009 pounds of zinc in 1948. The company zinc-fuming plant at East Helena was operated throughout the year and treated 228,000 tons of hot slag and old cold slag, compared with 221,754 tons in 1948; output of zinc-lead fume increased from 35,781 tons in 1948 to 37,300 tons in 1949.

The lead smelter of the American Smelting & Refining Co. at East Helena operated throughout the year and treated chiefly lead-silver concentrates from Idaho and Washington, residues from the electrolytic zinc plants at Anaconda and Great Falls, and crude ore, concentrates, and old tailings from numerous districts in Montana.

GOLD

Gold output declined at virtually all of Montana's larger placers and gold-producing lodes in 1949. Declines were pronounced at the Butte operations of the Anaconda Copper Mining Co., H. & H. Mines dredging operation in Granite County, Drumlummon mine at Marysville, Porter Bros. dredging operation near Helena, and the Ruby Gulch mine in Phillips County; outputs from the Otis Williams dredge in Lewis and Clark County and the Estelle-New Year's Gift group in Park County appear to have held near the 1948 level.

The seven leading State gold producers in 1949 were the Butte Hill mine and dumps of the Anaconda Copper Mining Co. (copper ore and zinc-lead ore), Estelle-New Year's Gift group (copper ore), Drumlummon mine (gold ore), Porter Bros. placer, Ruby Gulch mine (gold ore), H. & H. Mines placer and Otis Williams placer. These properties supplied 67 percent of the State gold in 1949.

SILVER

Yield of silver at the Butte Hill mine and dumps of the Anaconda Copper Mining Co. was 11 percent lower in 1949 than in 1948. The Emma mine at Butte, in second place, likewise experienced a decline, but the Mike Horse mine at Flesher, in third place, produced 18 percent more silver than in 1948. These three properties contributed 90 percent of the State silver in 1949.

COPPER

The slight uptrend in copper output in Montana in 1948 was reversed in 1949 owing to curtailment of operations in June at the Butte Hill mine and dumps of the Anaconda Copper Mining Co. Yield of copper from zinc-lead ore increased slightly, but that from copper ore declined appreciably.

LEAD

Output of lead in 1949 increased 79 percent at the Jack Waite mine and 33 percent at the Mike Horse mine, but these gains were more than counterbalanced by decreases at the Butte Hill mine and dumps and the Emma mine.

The four leading lead producers, which supplied 82 percent of the State lead in 1949, were the Butte Hill mine and dumps at Butte, the Mike Horse mine at Flesher, the Emma mine at Butte, and the Jack Waite mine in Sanders County.

ZINC

With the exception of the Travona and Mike Horse mines, all the larger zinc producers in Montana reported declines in 1949. Decreases were particularly marked at Butte from June through September, following sharp breaks in the price of zinc.

The leading zinc producers in 1949 were the Butte Hill mine and dumps, Emma mine, Mike Horse mine, East Helena old slag dump, and the Travona mine, which together supplied 98 percent of Montana's zinc.

SILVER BOW COUNTY

Production of ore in Silver Bow County in 1949 declined 16 percent, gold, 31, lead 17, silver 13, zinc 12, and copper 8 percent, compared with 1948. The total value of the five metals in 1949 was 17 percent less than in 1948 and represented 86 percent of the State value in 1949. From its Butte Hill mine and dumps, the Anaconda Copper Mining Co. in 1949 produced 28 percent of the State gold, 84 percent of the silver, 99 percent of the copper, 48 percent of the lead, and 75 percent of the zinc.

Production of ore, gold, silver, copper, lead, and zinc in Silver Bow County, Montana, 1948-49, in terms of recovered metals

Product	1948		1949	
	Quantity	Value	Quantity	Value
Ore, short tons	2,637,479	———	2,210,000	———
Gold, fine ounces	19,163	$670,705	13,200	$462,000
Silver, fine ounces	6,100,232	5,521,018	5,282,000	4,780,477
Copper, short tons	57,712	25,046,900	53,230	20,972,620
Lead, short tons	13,224	4,734,353	10,935	3,477,330
Zinc, short tons	52,625	13,998,356	46,515	11,907,840
Total value	———	49,971,332	———	41,600,267

Mine production of gold, silver, copper, lead, and zinc in Montana in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces).	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January..........	3,000	595,200	4,465	1,665	5,500
February..........	3,055	556,700	5,330	1,740	5,320
March.............	4,025	632,900	5,580	1,900	5,965
April............	4,180	607,370	5,050	1,545	5,040
May..............	4,550	645,965	5,020	1,525	5,520
June.............	4,100	444,475	4,105	1,460	4,085
July.............	4,230	410,850	3,840	1,310	3,525
August...........	3,850	460,180	3,915	1,390	3,585
September........	3,870	353,710	3,680	1,135	2,585
October..........	4,000	417,000	4,200	1,365	3,060
November.........	3,940	435,000	4,315	1,385	3,280
December.........	3,900	433,650	4,350	1,405	3,360
Total: 1949......	46,700	5,993,000	53,850	17,825	50,825
1948......	73,091	6,930,716	58,252	18,411	59,095

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Mineral Market Report
M.M.S. No. 1811

METAL MINING IN ARIZONA, 1949 - PRELIMINARY ANNUAL FIGURES

Despite marked declines in the sales price of lead and zinc during 1949, the outputs of these metals in Arizona in 1949 were far greater than in any year in the history of the State, but the output of copper, the most important part of the State's production, decreased 18,621 short tons (5 percent), according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. Lead output increased to 33,400 tons, a 12-percent gain over 1948; zinc to 70,050 tons, a 29-percent gain; gold to 110,600 fine ounces, a 1-percent gain; and silver to 5,070,000 fine ounces, a 5-percent gain. Copper output declined to 356,500 tons, a 5-percent loss. During the first half of the year when the sales price of lead and zinc was high the State produced 16,460 tons of lead and 33,990 tons of zinc, and during the last half of the year when prices were low it produced 16,940 tons of lead and 36,060 tons of zinc. Copper output during the first half of the year was 197,815 tons and during the last half of the year 158,685 tons. However, the State remained the largest producer of copper in the United States, ranked second in zinc (fourth in 1948), and again ranked first in the total value of the five metals. The preliminary figures for 1949 are based on actual mine production reported by operators and on receipts at smelters and the United States mints covering 10 months, with November and December production calculated from other sources of information. Comparative production figures for 1945-48 are given in the accompanying table.

Arizona ores and gravels in 1949 yielded gold, silver, copper, lead, and zinc valued at $177,474,350, a loss of $18,733,598 (10 percent) from 1948. The value of the gold output was $3,871,000--2 percent of the total value; silver, $4,588,350--3 percent; copper $140,461,000--79 percent; lead, $10,621,200--6 percent; and zinc, $17,932,800--10 percent.

MINING

The drop in base metal prices in March and April and the subsequent reduction in the work-week to 40 hours, caused one important producer of copper and one large producer of zinc to suspend operations, and other important copper producers to curtail production. The output of copper ore, by far the most important part of Arizona's mining industry, dropped from 39,072,204 tons in 1948 to about 37,100,000 tons in 1949, but the output of zinc-lead ore increased from a record output of 664,603 tons in 1948 to about 760,000 tons in 1949. There were also increases in outputs of lead ore and zinc-copper ore, but decreases in zinc ore and siliceous ores. About 97 percent of the State total ore was copper ore mined in the Copper Mountain (Morenci), Globe-Miami, Ajo, Mineral Creek (Ray), Eureka (Bagdad), Verde

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Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

(Jerome), Warren (Bisbee), and Pioneer (Superior) districts, and 96 percent of the State zinc-lead ore was mined in the Warren (Bisbee), Big Bug, Old Hat (Oracle), Pima, and Harshaw districts. Mining operations at 6 open pits--Ajo, Bagdad, Inspiration, Miami (Castle Dome), Morenci, and Ray--produced approximately 29,000,000 tons of copper ore in 1949 compared with 5 open pits in 1948, which produced 29,638,873 tons. Open-pit mining at the Ray property of the Kennecott Copper Corp. began in October.

MILLING AND SMELTING

Of the total ore produced in 1949 in Arizona, 98 percent was treated in 35 concentration mills and in 2 copper-leaching plants; nearly all of the remainder was shipped crude to smelters. The large copper-concentration plants at Morenci (45,000-ton-a-day), Ajo (25,000-ton), Miami (18,000-ton), Inspiration (18,000-ton), Hayden (10,000-ton), Castle Dome (10,000-ton), Bagdad (3,000-ton), Clarkdale (2,100-ton), and Superior (1,150-ton), the copper-leaching plants at Inspiration (9,000-ton), and Miami (3,000-ton), and the zinc-lead flotation mills at Bisbee (Copper Queen branch 900-ton and Shattuck Denn 150-ton), Sahuarita (Eagle-Picher 500-ton), Humboldt (Iron King 470-ton), Tiger (St. Anthony 500-ton), Patagonia (Trench 200-ton), and Klondyke (Athletic 100-ton) were operated continuously in 1949.

All 6 copper smelters in Arizona--International Smelting & Refining Co. at Miami, Magma Copper Co. at Superior, Phelps Dodge Corp. at Clarkdale, Douglas, and Morenci, and American Smelting & Refining Co. at Hayden--operated continuously throughout the year, but at a lower rate than in 1948. Arizona has no lead or zinc smelters; all the lead concentrates produced at mills in the State in 1949 were shipped to the lead smelter at El Paso, Texas, and all the zinc concentrates were shipped to zinc smelters at Amarillo and Dumas, Texas; Bartlesville, Oklahoma; Fort Smith, Arkansas; and Great Falls, Montana. Construction of the new copper smelter at Ajo progressed during the year; this new smelter is expected to be operating before the end of 1950.

METAL PRICES

The price of gold ($35 per ounce) and the price of silver ($0.905 per ounce) fixed by the United States Government, remained unchanged in 1948 and 1949. The average weighted yearly price of copper decreased from $0.217 a pound to $0.197; lead from $0.179 a pound to $0.159; and zinc from $0.133 a pound to $0.128. The market price of lead began dropping in March, and in June it reached a low of 12 cents a pound; the price of zinc began decreasing in March also, and it reached a low of 9.4 cents a pound in July; the price of copper began dropping in April, and it reached a low of 16.3 cents a pound in June.

GOLD

The output of gold in Arizona in 1949 was 11,600 fine ounces, about 1,100 ounces more than in 1948. Nearly 74 percent of the gold and 49 percent of the silver produced in Arizona in 1949 were recovered from copper ore mined at Bisbee, Ajo, Jerome, Superior, Morenci, and Miami. The rest of the gold came largely from zinc-lead ore from a mine in the Big Bug district. Most of the remaining silver came from zinc-lead ore from the Big Bug, Harshaw, Pima, Warren (Bisbee), and Old Hat districts, zinc-copper ore from the Verde (Jerome) district, and silver ore from the Ash Peak district.

Production of gold from copper ore decreased from 84,391 ounces in 1948 to about 81,500 ounces in 1949, but that from zinc-lead ore increased from 15,361 ounces to about 18,500 ounces, and that from zinc-copper ore from 926 ounces to 4,600 ounces. The output of gold from placers decreased from 838 ounces in 1948 to an estimated 600 ounces in 1949. The largest producers of gold in Arizona in 1949 were the New Cornelia, United Verde, Iron King, Magma, Copper Queen, and Morenci mines; these 6 properties produced 90 percent of the State total.

SILVER

The output of silver in Arizona in 1949 was 5,070,000 fine ounces, 232,260 ounces more than in 1948. Production of silver from copper ore decreased from 2,814,833 ounces in 1948 to about 2,500,000 ounces in 1949, but that from zinc-lead ore increased from 1,544,153 ounces to about 1,870,000 ounces, and that from zinc-copper ore from 65,811 ounces to about 200,000 ounces. Approximately 76 percent of the State silver output in 1949 came from the Copper Queen, Morenci, New Cornelia, and United Verde mines of the Phelps Dodge Corp., and the Iron King and Magma mines. The output of silver from the Warren district, the principal silver-producing area in Arizona, decreased from 1,432,172 ounces in 1948 to about 1,200,000 ounces in 1949. This loss resulted from suspension in June of copper operations at the Copper Queen mine at Bisbee.

COPPER

The output of recoverable copper in Arizona in 1949 (715,000,000 pounds) was 37,242,000 pounds less than in 1948. This loss resulted mainly from curtailment in mining copper ore by some of the large producers caused by a decline in the sales price of copper beginning in April, and by suspension in June of copper operations at the Copper Queen mine at Bisbee. Despite a 6-percent loss in copper output in 1949, the Morenci mine remained by far the largest producer of copper in Arizona; it was followed by the New Cornelia, Inspiration, Miami, Castle Dome, Magma, United Verde, Kennecott (Ray mines), Copper Queen, and Bagdad properties. These 10 mines contributed about 704,000,000 pounds, compared with the same 10 mines which produced 740,239,574 pounds in 1948, or 99 percent of the State total.

The Copper Mountain (Morenci) remained the chief copper-producing district in Arizona in 1949, although its output declined about 19,000,000 pounds to 277,600,000 pounds; the Globe (Inspiration-Miami) district was second, its output decreasing from 176,956,200 pounds to 158,000,000; the Ajo district ranked third, increasing from 111,230,400 pounds to 111,800,000; the Pioneer (Superior) district ranked fourth, increasing from 37,441,500 pounds to 43,000,000; and the Verde (Jerome) district ranked fifth, increasing from 29,087,800 pounds to 41,000,000. The output from the Warren (Bisbee) district decreased from 38,407,300 pounds to 20,000,000, that from the Mineral Creek (Ray) district was about the same as that in 1948 (37,505,400 pounds), but that from the Eureka (Bagdad) district increased from 14,494,000 pounds to 15,550,000.

LEAD

Continuous operations of lead and zinc-lead mines in Arizona throughout 1949 resulted in an output of 66,800,000 pounds of recoverable lead, the largest in any year in the history of the State, and about 7,000,000 pounds more than the record output of 1948. The 900-ton flotation mill at the Copper Queen branch of The Phelps Dodge Corp. at Bisbee treated 28 percent more zinc-lead ore in 1949 than in 1948, and the property remained by far the largest producer of lead and zinc in Arizona. Other large producers of lead were the Mammoth-St. Anthony property at Tiger, the San Xavier (Eagle-Picher Mining & Smelting Co.) south of Tucson, the Iron King mine at Humboldt, and the Trench-Flux group near Patagonia. In 1949 these 5 properties produced 90 percent of the State lead output. About 93 percent of the lead output in 1949 was recovered from zinc-lead ore, and the rest largely from lead ore. Production of lead from zinc-lead ore increased from 53,713,595 pounds in 1948 to about 62,500,000 pounds in 1949, but that from lead ore declined from 5,518,805 pounds to about 4,000,000 pounds.

ZINC

Arizona again succeeded in setting a new record in zinc output in 1949 after reversing the uptrend in 1948; the output in 1949 increased to 140,100,000 pounds, 31,144,000 pounds more than in 1948. The Copper Queen mine at Bisbee, by far the largest producer of zinc in Arizona in 1949, increased its output of zinc 29 percent over 1948. Other large producers of zinc were the Iron King, San Xavier, Mammoth-St. Anthony, United Verde, Trench-Flux, Old Dick, and Republic (Coronado Copper & Zinc Co.) properties. In 1949 these 8 properties produced 97 percent of the State zinc output. About 89 percent of the zinc output in 1949 was recovered from zinc-lead ore and most of the remainder from zinc-copper ore. Production of zinc from zinc-lead ore increased from 96,339,476 pounds in 1948 to about 124,300,000 pounds in 1949 and that from zinc-copper ore from 11,270,128 pounds to 15,000,000 pounds.

Production of gold, silver, copper, lead, and zinc in Arizona, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Ounces	Value	Ounces	Value	Short tons	Value
1945.....	77,223	$2,702,805	3,558,216	$2,530,287	287,203	$77,544,810
1946.....	79,024	2,765,840	3,268,765	2,641,162	289,223	93,708,252
1947.....	95,860	3,355,100	4,569,084	4,135,021	366,218	153,811,560
1948.....	109,487	3,832,045	4,837,740	4,378,399	375,121	162,802,514
1949.....	110,600	3,871,000	5,070,000	4,588,350	356,500	140,461,000

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945...............	22,867	$3,933,124	40,231	$9,251,980	$95,963,006
1946...............	23,930	5,216,740	43,665	10,654,260	114,986,254
1947...............	28,566	8,227,008	54,644	13,223,848	182,752,537
1948...............	29,899	10,703,842	54,478	14,491,148	196,207,948
1949...............	33,400	10,621,200	70,050	17,932,800	177,474,350

Mine production of gold, silver, copper, lead, and zinc in Arizona in 1949, by months in terms of recovered metals

	Gold (ounces)	Silver (ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January..........	10,360	431,135	33,020	2,320	4,725
February.........	9,170	418,650	32,080	2,430	5,180
March............	11,790	522,950	37,365	2,815	5,905
April............	10,870	495,620	34,970	2,890	5,750
May..............	10,500	460,300	32,420	2,835	5,865
June.............	8,855	416,650	27,960	3,170	6,565
July.............	7,365	347,620	25,470	2,725	5,635
August...........	6,930	367,900	22,455	2,680	5,990
September........	8,180	371,800	26,045	2,720	5,695
October..........	9,020	410,375	27,555	2,980	6,340
November.........	8,760	410,000	28,560	2,950	6,300
December.........	8,800	417,000	28,600	2,885	6,100
Total............	110,600	5,070,000	356,500	33,400	70,050

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

For release JANUARY 9, 1950.

MINERAL MARKET REPORTS
MMS NO. 1812

METAL MINING IN WASHINGTON, 1949 - PRELIMINARY ANNUAL FIGURES

Work stoppages, declining base-metal prices, and generally unfavorable economic conditions at some operations forced all five major metals in Washington to lower production levels in 1949, according to the Salt Lake City office of the Bureau of Mines, United States Department of the Interior. Output of gold declined nearly 4 percent, silver and copper 10 each, and lead and zinc 13 each; ore production dropped 4 percent.

Less metal output coupled with lower average prices for base metals reduced the total value of the five metals 15 percent from $11,171,715 in 1948 to $9,475,582 in 1949. The value of lead decreased 23 percent, copper 18, zinc 16, silver 10, and gold nearly 4. Of the total value in 1949, zinc contributed 30 percent, gold 25, copper and lead 21 each, and silver 3 percent.

Based on reports by operators and receipts at smelters and Mint offices covering 10 months of the year and with November and December estimated from other sources of information, preliminary figures for 1949, with comparative figures for 1945-48, are given in the accompanying table.

The value of the metals produced in 1949 has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.905+ per fine ounce ($0.905+); copper, $0.197 per pound ($0.217); lead, $0.159 per pound ($0.179); zinc, $0.128 per pound ($0.133).

MINING

The work stoppage at the Grandview mine of the American Zinc, Lead & Smelting Co. in the Metaline district was settled in September 1949 after having been in effect since June 1948. The mill began operating September 20, and by October production of lead and zinc had reached normal levels. The strike settlement made milling facilities available once more for the Metaline Mining & Leasing Co., and thus that company began production in September for the first time in 1949.

Prepared by C. E. Needham and Paul Luff, Salt Lake City office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

The Pend Oreille Mines & Metals Co. in the Metaline district produced nearly 40 percent more ore in 1949 than in 1948, and preliminary figures indicate that the Howe Sound Co. made a slight increase at its Holden mine in Chelan County; ore output dropped a few thousand tons at the Knob Hill mine in Ferry County. Losses in the State were greater than the gains, so that total ore production dropped 4 percent from 974,257 tons in 1948 to an estimated 933,000 tons in 1949. Of the quantity produced in 1949, 66 percent was zinc-copper ore, 29 percent was zinc-lead, lead, and zinc ores, and 5 percent was gold and silver ores.

Producing lode mines in the State decreased from 30 in 1948 to an estimated 23 in 1949.

GOLD

The leading gold producers in Washington in 1949 were the Holden mine, Knob Hill mine, and Aurum group, which together supplied all but a very small part of the State total gold. Compared with 1948, output of the metal declined at each of the above properties.

SILVER

Silver output increased appreciably in 1949 at the Bonanza mine in Stevens County but declined slightly at the Holden mine, Knob Hill mine, and Aurum group. These four properties produced 95 percent of the State silver in 1949. The Knob Hill and Holden mines were virtually tied for first and second places, followed in order by the Bonanza mine and the Aurum group.

COPPER

The Holden mine of the Howe Sound Co. in Chelan County produced about 10 percent less copper in 1949 than in 1948. No other properties in the State contributed important quantities of the metal in 1949.

LEAD

In spite of the work stoppage in effect most of the year at the Grandview mine, normally the State's largest lead producer, lead output in Washington in 1949 was less than 1,000 tons below the 1948 figure. The Bonanza mine reported a substantial increase in lead yield, and the property of the Pend Oreille Mines & Metals Co. in the Metaline district made a light increase; production declined at the Deep Creek mine in Stevens County. Leading State producers of lead in 1949 were the property of the Pend Oreille Mines & Metals Co., and the Bonanza, Grandview, and Deep Creek mines. From these four operations came 96 percent of the State lead.

ZINC

The property of the Pend Oreille Mines & Metals Co. made a large increase in zinc output in 1949, but declines were reported from the Holden, Deep Creek, and Grandview mines. Leading zinc producers in 1949 in order of output were the property of the Pend Oreille Mines & Metals Co., and the Holden, Grandview, and Deep Creek mines, which together contributed 96 percent of the total zinc.

LEADING COUNTIES

Chelan County remained in first place among Washington Counties in 1949 in both tonnage of ore treated and value of metals produced. The 611,000 tons of ore treated, nearly all from the Holden mine, yielded in recovered metals 41,350 ounces of gold, 127,000 ounces of silver, 10,140,000 pounds of copper, and 5,490,000 pounds of zinc, having a total value of $4,262,490, or 45 percent of the State total value.

Pend Oreille County, in second place, produced 250,000 tons of ore, yielding metals valued at $2,897,000.

Mine production of gold, silver, copper, lead, and zinc in Washington, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Ounces	Value	Ounces	Value	Short tons	Value
1945..	57,860	$2,025,100	281,444	$200,138	5,821	$1,571,670
1946..	51,168	1,790,880	264,453	213,678	4,527	1,466,748
1947..	34,965	1,223,775	293,736	265,831	2,240	940,800
1948..	70,075	2,452,625	375,831	340,146	5,665	2,458,610
1949..	67,600	2,366,000	337,000	305,002	5,090	2,005,460

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945..	3,802	$653,944	11,693	$2,689,390	$7,140,242
1946..	2,987	651,166	11,329	2,764,276	6,886,748
1947..	5,359	1,543,392	13,800	3,339,600	7,313,398
1948..	7,147	2,558,626	12,638	3,361,708	11,171,715
1949..	6,200	1,971,600	11,045	2,827,520	9,475,582

Mine production of gold, silver, copper, lead, and zinc in Washington in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January....	5,970	30,600	465	495	790
February...	5,930	34,000	460	385	695
March......	6,765	34,500	480	550	790
April......	7,070	38,135	485	550	810
May........	6,235	36,775	435	470	810
June.......	6,240	32,150	475	455	925
July.......	4,310	23,200	365	395	535
August.....	5,280	24,900	450	400	610
September..	4,920	20,800	385	425	690
October....	5,000	21,165	350	680	1,465
November...	4,910	20,200	365	690	1,450
December...	4,970	20,575	375	705	1,475
Total: 1949	67,600	337,000	5,090	6,200	11,045
1948	70,075	375,831	5,665	7,147	12,638

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For immediate release

MINERAL MARKET REPORTS
MMS NO. 1813

TITANIUM IN 1949
(Preliminary figures)

The titanium industry continued to break records in 1949 despite the fact that the midyear drop in general industrial activity seriously curtailed demand for titanium pigments for a limited period, according to the Bureau of Mines, U. S. Department of the Interior. Attention was again focussed on investigation of titanium metal and alloys and again there were predictions that this new metal would be developed as a large-scale structural material more quickly than had been the case with some of its predecessors. The large amount of money and effort being expended in investigative work on titanium indicate that the basis for such predictions is sound.

Demand for titanium pigments in the United States in the second and third quarters was reduced from the prevailing all-time record rate, but the year-end pick-up caused the annual consumption of ilmenite for this purpose to be close to previous top levels. Supplies of ilmenite were again record-breaking because both domestic production and imports were at all-time peaks. The high rate of domestic consumption failed again to absorb supplies from all sources and stocks at the end of 1949 were greater than ever before.

Titanium metal was produced commercially for the second successive year. One pilot plant operated continuously at approximately 100 pounds a day throughout the year and a second pilot plant of somewhat larger capacity went into production near the close of the year.

In Canada, the Government-built pilot plant at Haley, Ontario, is producing 25 to 200-pound ingots occasionally for Government experimental work. The Pidgeon-Rostrom process used is claimed to be cheaper than other processes.

In 1950 world supplies will be augmented by production from the newly-developed Allard Lake, Quebec, property. Immediate plans call for an ultimate production of 700 tons daily of slag containing in excess of 70 percent TiO_2, from 1,500 tons of ore. Additional units may be constructed if future conditions warrant.

Ilmenite. - Domestic production of ilmenite rose to a new top in 1949 partly because the Starke, Florida, property of E. I. du Pont de Nemours & Co. joined the ranks of producers early in that year. The Tahawus property of the National Lead Co. in the Adirondacks mountains, New York, in recent years the world's largest ilmenite-producing mine, continued in 1949 to produce at virtually the record rate established in 1948. Other producers in 1949 were: Rutile Mining Co. of Florida, near Jacksonville; Riz Mineral Co., near Vero Beach, Fla.; Yadkin Mica and Ilmenite Co., Finley,

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Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

N. C.; Calco Chemical Division, American Cyanamid Co., Piney River, and American Rutile Corp., Roseland, both in Virginia; and Ferro-Titan Minerals Co., Los Angeles County, Calif.

Ilmenite concentrates produced and shipped in the United States
in 1945-49, in short tons

Year	Produced (Gross Weight)	Shipped	
		Gross Weight	TiO_2
1945	308,516	308,518	141,852
1946	282,447	282,708	130,624
1947	336,533	336,061	157,328
1948	383,745	381,508	177,447
1949	399,000	388,500	186,000

Imports of ilmenite for January to October, inclusive, according to records of the Department of Commerce, were 295,000 short tons, an increase of 29 percent over the 228,000 tons received in the first ten months of 1948. Totals for all of 1949 undoubtedly will be higher than the previous all-time peak of 301,311 tons in 1947. India as usual led the list of suppliers by a wide margin, sending 277,400 tons of the total for January-October 1949, followed by Norway with 9,800, Egypt with 7,400, Canada with 500 and Ceylon with what was probably an experimental 2-ton lot.

The average quotation per gross ton for ilmenite containing 56-59 percent TiO_2, f.o.b. Atlantic seaboard, dropped from a range of $18-$20, according to grade and impurities, at the beginning of the year to $16-$18 in early October, to $15-$17 late in that month, and further to $14-$16 in the first half of November. Quotations were given as nominal. The drop in prices is said to have prevented some proposed expansion in domestic production and even to have threatened some already-active operation

Rutile. - Production and shipments of rutile were higher than ever before, but inasmuch as the totals for 1949 include a quantity of mixed product containing altered ilmenite, leucoxene and rutile, the comparison is somewhat misleading. The mixed product was used in the manufacture of titanium oxide. The companies that produced rutile in 1949, including the mixed product were: E. I. du Pont de Nemours & Co., Starke, Fla.; Florida Ore Processing Co., Inc., and Riz Mineral Co. near Vero Beach, Fla.; Rutile Mining Co. of Florida, near Jacksonville, and the American Rutile Corp., Roseland, Va.

Rutile concentrates produced and shipped in the United States
in 1945-49, in short tons

Year	Produced (Gross Weight)	Shipped	
		Gross Weight	TiO_2
1945	7,179	6,837	6,414
1946	7,453	7,514	7,046
1947	8,562	5,157	4,813
1948	7,380	9,907	9,226
1949	1/11,600	1/10,400	9,300

1/ Includes a quantity of mixed product containing altered ilmenite, leucoxene and rutile which is produced at one operation and used in the manufacture of titanium oxide.

Imports of rutile, all from Australia, were only 2,750 short tons in the first 10 months of 1949 or little more than one-third of receipts in the same period of 1948.

Nominal quotations for rutile, guaranteed minimum 94 percent concentrate, after continuing at 8-10 cents a pound for a number of years fell to 6-8 cents in December 1948 and to 4-6 cents in May 1949, at which level it remained for the rest of the year.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For release JANUARY 17, 1950

MINERAL MARKET REPORT
MMS NO. 1814

METAL MINING IN NEVADA, 1949 - PRELIMINARY ANNUAL FIGURES

Despite one of the most severe winters on record and declines in prices and demand for the base metals, Nevada mines in 1949 actually surpassed the 1948 outputs of gold, silver, lead, and zinc, according to the San Francisco office of the Bureau of Mines, United States Department of the Interior. Copper production in 1949 continued the decline uninterrupted since the all-time record of 88,663 tons in 1942, falling 17 percent below the 1948 level in quantity and 25 percent in value.

Preliminary figures for 1949 with comparative final figures for 1945-1948 are given in accompanying tables.

The value of the five metals in 1949 was $29,779,731 or 13 percent less than the value of $34,055,480 in 1948. Of the State total value in 1949, copper contributed 49 percent, zinc, 18 percent, gold, 15 percent, lead, 12 percent, and silver, 6 percent.

The average prices (preliminary for 1949) used in calculating the gross values of the outputs of the metals were: Gold, $35 per fine ounce in 1948 and 1949; silver, $0.905 plus per fine ounce in 1948 and 1949; copper, $0.217 per pound in 1948 and $0.197 in 1949; lead, $0.179 per pound in 1948 and $0.159 in 1949; zinc, $0.133 per pound in 1948 and $0.128 in 1949.

GOLD

Preliminary data for 1949 show that 96 percent (93 percent in 1948) of Nevada gold was produced at lode mines and 4 percent (7 percent in 1948) at placers. Byproduct gold from base-metal ores comprised 38 percent of the output of gold compared to 38 percent in 1948, whereas gold recovered from precious metal ores increased from 55 percent in 1948 to 58 percent in 1949. New establishments developed and brought into production during 1949 included the mines and mill of Goldfield Deep Mines Co. of Nevada, Goldfield district, Esmeralda County and the Natomas Co. bucket-line dredge in the Battle Mountain district, Lander County. Nevada Porphyry Gold Mines, Inc. placer at Round Mountain, Nye County, an innovation in large scale conveyor handling of gravel was readied for production late in the year.

Leading producers of gold in the order named were: The Kennecott Copper Corp. (Nevada Mines Division) Robinson district, White Pine County; Getchell Mines, Inc., Getchell mine, Potosi district, Humboldt County; London Extension Mining Co., Goldacres mine, Bullion district, Lander County; Consolidated Coppermines Corp., Robinson district, White Pine County; and Consolidated Chollar Gould and Savage Mining Co., Overman mine, Comstock district, Storey County. The Natomas Co. dredge,

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Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

and the Southwest Dredging Co. dragline operation in the Rochester district, Pershing County, were the principal 1949 producers of placer gold in Nevada. Dayton Consolidated Mines Co. and Double King Mines, Inc. (Wm. M. Donovan) received custom ore from various mines principally in Lyon and Storey Counties during the year. Standard Cyaniding Co., an important producer of gold in 1948, suspended operations at its open pit mine and cyanide mill in Pershing County, early in 1949.

SILVER

As in 1948 a large percentage of Nevada's silver was recovered from base metal ores and concentrates during 1949. The Combined Metals Reduction Co., Pioche district, Lincoln County, treated zinc-lead ore and contributed more than one-fourth of the State silver output. Second place was held by Copper Canyon Mining Co., Copper Canyon mine, Battle Mountain district, Lander County, a development of 1948, (zinc-lead concentrate). Summit King Mines, Ltd., Summit King group, Sand Springs district, Churchill County (gold-silver ore) in third place was followed by Consolidated Chollar Gould and Savage Mining Co., Overman mine (gold-silver ore). Central Comstock Mines Corp., a new enterprise cyaniding tailings in the Comstock district, Storey County, contributed substantially to the State total silver in 1949.

COPPER

Virtually the entire 1949 recoverable copper output was produced in the Robinson district, White Pine County, by the Kennecott Copper Corp. (Nevada Mines Division) and the Consolidated Coppermines Corp. from the Ruth pit and extension. Underground mining by Consolidated Coppermines Corp. ceased in June 1949. Kennecott operated its McGill concentrator and copper smelter throughout the year treating pit ore. In addition, considerable tonnages of gold and silver siliceous flux ores from various districts in the State were smelted.

LEAD AND ZINC

The Pioche district and adjacent Comet district, Lincoln County, together produced about 60 percent of the lead and more than 90 percent of Nevada's zinc in 1949. Practically all of the zinc and a large percentage of the lead were recovered from concentrates produced at the Combined Metals Reduction Co. Caselton mill. This mill treated ore from the company operated mines and ore shipped to it from the Ely Valley Mine's Ely Valley mine, Prince Consolidated Mining Co.'s Prince mine, the Comet mine of the Comet Mines, Inc., and the Raymond Ely West mine, as well as small tonnages from other neighboring districts.

Important producers of lead and zinc in addition to those in the Pioche and Comet districts included: The Copper Canyon Mining Co., Copper Canyon mine, L. F. Jacobson, Yellow Pine mine, Yellow Pine district, Clark County, and Bristol Silver Mines Co., Bristol mine, Jack Rabbit district, Lincoln County (lead and zinc); McFarland & Hullinger, Cleveland mine and Lee Bayless, Delno mine, both in the Delano district, Elko County (lead).

Mine production of gold, silver, copper, lead, and zinc, in Nevada in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	6,830	98,170	3,260	660	1,420
February	7,510	129,070	2,350	750	2,140
March	10,900	177,900	4,270	1,010	2,300
April	12,930	181,470	4,120	1,130	2,410
May	10,350	174,830	3,480	1,030	2,110
June	10,460	163,830	2,730	900	1,550
July	8,850	134,260	1,530	690	1,300
August	11,870	151,090	3,720	970	1,180
September	13,370	160,780	3,070	1,150	1,560
October	12,470	154,800	2,900	860	1,550
November	12,919	161,750	2,940	940	1,490
December	13,140	162,870	3,020	960	1,510
Total: 1949	131,599	1,850,820	37,390	11,050	20,520
1948	111,532	1,790,020	45,242	9,777	20,288

Mine production of gold, silver, copper, lead, and zinc in Nevada, 1945-1949, in terms of recovered metals

Year	Gold		Silver		Copper		Lead		Zinc		Total value
	Fine ounces	Value	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
1945----	92,265	$3,229,275	1,043,380	$741,959	52,595	$14,200,650	6,275	$1,079,300	21,457	$4,935,110	$24,186,294
1946----	90,680	3,173,800	1,250,651	1,010,526	48,616	15,751,584	7,175	1,564,150	22,649	5,526,356	27,026,416
1947----	89,063	3,117,205	1,337,579	1,246,709	49,603	20,833,260	7,161	2,062,368	16,970	4,106,740	31,366,282
1948----	111,532	3,903,620	1,790,020	1,620,058	45,242	19,635,028	9,777	3,500,166	20,288	5,396,608	34,055,480
1949----	131,599	4,605,965	1,850,820	1,675,086	37,390	14,731,660	11,050	3,513,900	20,520	5,253,120	29,779,731

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

For release JANUARY 10, 1950.

MINERAL MARKET REPORT
MMS NO. 1815

METAL MINING IN SOUTH DAKOTA, 1949 - PRELIMINARY ANNUAL FIGURES

Production of gold in South Dakota increased 21 percent in 1949 over 1948, and output during the last six months of 1949 reached the highest rate since the wartime restrictions on gold mining were rescinded in 1945, according to the Denver office of the Bureau of Mines, United States Department of the Interior.

The Homestake mine at Lead, Lawrence County, largest gold-producing mine in the United States, operated continuously. Production in the last half of the year showed a large increase over the first half. Since the mine resumed operations after the wartime shutdown it has not operated a full year at normal productive capacity (more than 4,000 tons of ore daily) becuase of the limited number of men available for underground work. The Bald Mountain mine at Trojan, an important gold producer, also operated at a higher rate than in 1948. Some gold was produced from the Frerichs mine near Deadwood. The State output of silver was incidental to the production of gold. Development work was done at the Belle Eldridge mine near Deadwood, which produced lead-zinc-gold-silver ore in 1948.

Preliminary figures for 1949 show a total South Dakota output of 457,000 fine ounces of gold and 113,000 fine ounces of silver compared with 377,850 and 94,693 ounces, respectively, in 1948. The State had no mine output of lead or zinc in 1949, and has had no output of copper since 1944; lead production in 1948 was 16 tons and zinc 29 tons.

The value of the gold produced in 1949 was $15,995,000 and silver $102,265 — a total of $16,097,265 compared with $13,323,894 in 1948 (including $13,442 for lead and zinc). The price used in both years for gold was $35 a fine ounce. The prices used for silver were $0.905 for 1949 and $0.9050505 for 1948. The price used for lead in 1948 was $0.179 a pound and for zinc $0.133 a pound.

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Prepared by A. J. Martin, Denver office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Mine production of gold and silver in South Dakota in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Lead (short tons)	Zinc (short tons)
January..............	31,591	8,485	—	—
February.............	32,032	7,486	—	—
March................	38,277	9,161	—	—
April................	39,907	9,525	—	—
May..................	35,737	8,905	—	—
June.................	34,529	8,967	—	—
July.................	41,012	10,213	—	—
August...............	43,559	10,723	—	—
September............	38,551	9,144	—	—
October..............	40,514	10,174	—	—
November.............	40,641	10,115	—	—
December.............	40,650	10,102	—	—
Total: 1949.....	457,000	113,000	—	—
1948.....	377,850	94,693	16	29

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For release JANUARY 17, 1950

MINERAL MARKET REPORT
MMS NO. 1816

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METAL MINING IN WYOMING, 1949 - PRELIMINARY ANNUAL FIGURES

Mines in Wyoming produced approximately 400 fine ounces of gold and 30 fine ounces of silver in 1949 compared with 115 ounces of gold and 11 ounces of silver in 1948, according to the Denver office of the Bureau of Mines, United States Department of the Interior. No output of copper, lead or zinc was reported in the State in 1948 or 1949.

The value of the gold output in 1949, at $35 a fine ounce, was $14,000 and that of the silver, at $0.905 an ounce, was $27 — a total of $14,027. In 1948 the value of the gold output was $4,025 and that of silver $10.

Nearly all the State gold and silver produced in 1949, as in 1948 and 1947, came from the Carissa mine in the South Pass district, Fremont County. Development work and some mining were carried on during most of 1949, and the 100-ton amalgamation-cyanidation mill on the property was operated intermittently. Small lots of gold were recovered from the St. Louis mine in Fremont County and the Mercury and Sterling placers in Teton County.

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Prepared by A. J. Martin, Denver office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Mine production of gold and silver in Wyoming in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)
January-February	—	—
March	2	—
April	98	7
May	56	3
June	—	—
July	59	4
August	120	9
September	10	1
October	35	2
November	10	2
December	10	2
Total: 1949	400	30
1948	115	11

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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For Release JANUARY 23, 1950

MINERAL MARKET REPORTS
MMS. NO. 1817

METAL MINING IN NEW MEXICO IN 1949 - PRELIMINARY ANNUAL FIGURES

The mine production of zinc in New Mexico decreased 29 percent in 1949 from 1948 and was the lowest in quantity since 1939, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. The nearly 49-percent decline in the price of zinc from March to June, with high production costs continuing, led to the closing of all but one of the seven major zinc-producing mines and most of the small-scale operations. The output of recoverable zinc in the last half of the year was only 5,819 tons compared with 23,681 tons in the first half. Lead production, the bulk of which comes from mines yielding chiefly zinc, decreased 40 percent from 1948.

The production rate for copper was fairly steady throughout 1949, but the output was 25 percent under that in 1948. The large Chino open-pit mine in Grant County and the Bonney-Miser's Chest and Atwood mines in Hidalgo County operated throughout the year. The leaching operation at the Burro Mountain mine in Grant County shut down after the price of copper declined. There was little activity in straight gold or gold-silver mining in the State, and the quantity of gold and silver recovered from base-metal ores was smaller than in 1948.

Preliminary figures for 1949 show a total New Mexico output (in terms of recoverable metals) of 3,100 fine ounces of gold, 368,000 fine ounces of silver, 56,000 short tons of copper, 4,600 short tons of lead, and 29,500 short tons of zinc. Production in 1948 was 3,414 ounces of gold, 537,674 ounces of silver, 74,687 tons of copper, 7,653 tons of lead, and 41,502 tons of zinc.

The value of each metal for 1949, with comparable figures for 1948 in parentheses, was as follows: Gold $108,500 ($119,490), silver $333,040 ($486,622), copper $22,064,000 ($32,414,158), lead $1,462,800 ($2,739,774), and zinc $7,552,000 ($11,039,532)--a total of $31,520,340 compared with the record high of $46,799,576 in 1948. The metal prices used for 1949 were the United States Treasury buying price of $35 a fine ounce for gold and $0.905 a fine ounce for silver, and average weighted yearly prices of

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

$0.197 a pound for copper, $0.159 a pound for lead, and $0.128 a pound for zinc. The prices for 1948 were $35 for gold, $0.9050505 for silver, $0.217 for copper, $0.179 for lead, and $0.133 for zinc.

GOLD

Most of the New Mexico output of gold in 1949 was recovered from copper ore produced by the Atwood and Bonney-Miser's Chest mines in the Lordsburg district, Hidalgo County, and zinc-lead ore mined in the Central district, Grant County. Some gold ore was shipped from the Old Abe mine in Lincoln County, and the Malone-Darhasana in Grant County and a few ounces of placer gold were produced in Santa Fe County.

SILVER

Small tonnages of silver ore were shipped from a few scattered mines and prospects in New Mexico in 1949, but the bulk of the State output of silver was recovered from base-metal ores. Substantial silver producers included the Atwood and Bonney-Miser's Chest copper mines in Hidalgo County, the Ground Hog, Bayard, Hanover (Empire Zinc), and Kearney zinc-lead mines in Grant County, and the Waldo, Lynchburg, and Nitt zinc-lead mines in Socorro County.

COPPER

Much the largest producer of copper in New Mexico in 1949, as in the past, was the Chino open-pit mine of the Kennecott Copper Corp. Chino Mines Division at Santa Rita in the Central district, Grant County. In recent years the overall output from the mine has been augmented materially by expanded dump leaching operations. The mine and the 22,500-ton concentrator at Hurley were operated continuously in 1949 but production for the year was less than in 1948. Molybdenite is recovered in the mill as a byproduct. The company smelter adjacent to the mill treated company concentrates, precipitates, and crude siliceous copper ore (used as a flux). The smelter produces mostly fire-refined copper, but occasionally blister copper is made and shipped to an electrolytic refinery.

In Hidalgo County the Banner Mining Co. operated continously its Bonney-Miser's Chest group, principal producer of copper in the Lordsburg district since 1936. The mine is equipped with a 500-ton flotation mill. C. H. & S. A. McIntosh continued to work the Atwood copper mine, shipping ore direct to smelters. The leaching operations of the Phelps Dodge Corp. at its Burro Mountain mine at Tyrone, Grant County, were suspended in June. Some siliceous copper ore was shipped from the Torpedo mines in the Organ district, Dona Ana County, and the San Pedro Copper mine in the San Pedro or New Placers district, Santa Fe County.

LEAD

The New Mexico output of lead comes largely from mines yielding zinc as the principal metal. The larger producers of lead in 1949 were the American Smelting & Refining Co. Ground Hog and United States Smelting, Refining & Mining Co. Bayard groups in the Central district and the Waldo group (American Smelting & Refining Co.) and Lynchburg (S. S. Blayer) in the Magdalena district.

Small-scale operations in several districts yielded a substantial aggregate tonnage of lead, although activity in developing and mining small lead deposits diminished after the price of lead began to decline in March. Producers of lead ore included the Cash Entry mine and Marshall Bonanza in the Cerrillos district; Juanita and Queen, Magdalena district; Portalos and Royal Flush in the Hansonberg district; Iron King at Kingston; Readjustor and Dobies near Hot Springs; Summit and Francis K. group near Deming; Sacramento, Sacramento district (Otero County); Rimrock, Cooks Peak district; Hornet near Hachita (also zinc-lead ore); and Millsite (Waldo), Last Chance, Ruth, Baylés, and Montgomery, Lordsburg district.

ZINC

Successive declines in the price of zinc beginning with a drop from 17.5 to 16 cents a pound March 23 and continuing until a low of 9 cents was reached June 15 caused most of the zinc and zinc-lead mines in New Mexico to shut down. Large producers that suspended operations were the American Smelting & Refining Co. Ground Hog mine, the United States Smelting, Refining & Mining Co. Bayard group, the Kennecott Copper Corp. Oswaldo mine, the Peru Mining Co. Pewabic mine, the New Mexico Consolidated Mining Co. Kearney mine, all in the Central district, Grant County; and the Waldo mine of the American Smelting & Refining Co. at Magdalena. The foregoing six mines were among the seven leading producers of zinc in the State in 1949; the largest producer, the Empire Zinc Co. Hanover mine group in the Central district, operated throughout the year. The Hornet mine and mill of Mineral Operations, Inc., near Hachita operated continuously in 1949 at the rate of 40 to 50 tons of ore daily. Still Bros. worked the Last Chance and Millsite (old Waldo) mines near Lordsburg the last four months of the year, treating the ore in a mill at Lordsburg formerly used to treat fluorspar. Other zinc producers active part of the year and shipping ore to custom mills included the Houston-Thomas, Langston, and Cleveland mines in the Pinos Altos district; Royal John (Grand Central) and Grand View in the Swartz (Carpenter) district; Carlisle group in the Steeple Rock district; Still Bros. mines in the San Simon district; and Kelly group (Lynchburg mine) and Nitt mine in the Magdalena district.

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1949, by months, and in terms of recovered metal

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January....	267	33,619	4,978	487	3,241
February...	204	33,766	4,958	610	3,745
March......	356	48,516	5,458	858	4,325
April......	324	38,723	4,285	599	4,208
May........	234	39,564	5,181	764	4,302
June.......	394	41,360	5,641	612	3,860
July.......	268	27,251	5,748	296	1,547
August.....	194	24,942	4,240	183	902
September..	199	20,061	3,652	84	869
October....	206	17,808	3,524	26	876
November...	231	21,454	4,187	46	804
December...	223	20,936	4,148	35	821
Total:					
1949.....	3,100	368,000	56,000	4,600	29,500
1948.....	3,414	537,674	74,687	7,653	41,502

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UNITED STATES DEPARTMENT OF THE INTERIOR

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For release January 20, 1950

MINERAL MARKET REPORT
MMS NO. 1818

METAL MINING IN MISSOURI, OKLAHOMA, KANSAS, AND ARKANSAS, 1949

PRELIMINARY ANNUAL FIGURES

Reversing the preceding 6-year's downward trend, lead production in Missouri, Oklahoma, Kansas, and Arkansas as a whole rose 23 percent in 1949 over 1948, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. The large lead mines in Southeastern Missouri, which in 1948 were shut down 2-1/2 months by labor strikes, operated continuously in 1949; also, output of lead in the Tri-State zinc-lead district increased despite curtailments in ore production rates and shutdowns caused by sharp declines in prices of lead and zinc.

Zinc production in the Tri-State district, decreasing for the eighth consecutive year, was 9 percent less than in 1948 and the lowest since 1896. In the first few months of 1949 concentrate prices were high enough to support the mining of low-grade ore, which constitutes the bulk of the district reserves, and zinc output during March and April was the highest since June 1947. The drastic decline in the quoted price of zinc concentrates at Joplin—from $110 a ton for the week ending March 19 to a low of $50 June 13—disrupted virtually all operations, causing indefinite closing, temporary shutdown, or curtailment. The July production of zinc concentrates, reduced to an exceptionally low level by previous shutdowns and a work stoppage at the mines and mills of the largest producer, was only 3,529 tons compared with 18,256 tons in the peak month of March. From August through December the price received by the producers for zinc concentrates averaged $56.18 a ton, and the monthly production averaged 10,534 tons.

Preliminary figures for lead in 1949 show a total four States' output of 156,400 short tons (recoverable metal), comprising 126,218 tons from the Southeastern Missouri region, 30,171 tons from the Tri-State district, and 11 tons from Arkansas. In 1948 the output totaled 127,614 tons and comprised 100,654 tons from Southeastern Missouri, 26,901 tons from the Tri-State district, 37 tons from Central Missouri, and 22 tons from Arkansas.

The production of recoverable zinc totaled about 78,284 tons in 1949 compared with 85,892 tons in 1948. Of the total in 1949, the Tri-State district produced 77,490 tons, the Southeastern Missouri region 785 tons, and Arkansas 9 tons, compared with 84,839, 1,022 and 31 tons, respectively, in 1948.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Silver and copper were recovered as byproducts by smelters treating lead concentrates from the Southeastern Missouri region, and copper and a little silver were produced from lead-copper ore mined in the same region. The total output of copper in 1949 was 3,754 short tons and silver 120,780 fine ounces compared with 2,370 tons and 114,187 ounces, respectively, in 1948.

The value of the four States' output (recoverable metals) in 1949, at metal prices **shown below**, was: Lead, $49,735,200 ($45,685,812 in 1948); zinc, $20,040,704 ($22,847,272); copper, $1,479,076 ($1,028,580); and silver, $109,306 ($103,345 in 1948)—a total of $71,364,286 in 1949 compared with $69,665,009 in 1948.

The prices used for 1949 were the Treasury buying price of $0.905 a fine ounce of silver and average weighted yearly prices of $0.197 a pound of copper, $0.159 a pound of lead, and $0.128 a pound of zinc. In 1948 the price was $0.9050505 for silver, $0.217 for copper, $0.179 for lead, and $0.133 for zinc.

Southeastern Missouri.—The principal lead mines in Southeastern Missouri operated continuously in 1949 and production of lead increased 25 percent over 1948, when output was lower than usual because of work stoppages. Ore milled totaled about 6,879,000 tons compared with 5,385,000 tons in 1948; the totals for both years include some old tailings remilled.

The St. Joseph Lead Co., largest producer of lead in the United States, operated its Bonne Terre, Desloge, Federal (including Doe Run), and Leadwood groups of mines and four mills with a combined daily capacity of 26,400 tons in St. Francois County and the Mine La Motte mine and 2,000-ton mill in Madison County. Steady production rates were maintained throughout the year, and the company continued to do extensive exploratory drilling and development work. The concentrates produced in the St. Francois County mills included a considerable tonnage of lead concentrates derived from remilling old tailings and zinc concentrates recovered as a byproduct from crude ore treated in one mill.

The National Lead Co., St. Louis Smelting and Refining Division operated continuously its Madison lead-copper mine and 1,200-ton all-flotation mill at Fredericktown; the output of both lead and copper concentrates showed a large increase over 1948. The Catherine-Fleming mine was operated by the Park City Consolidated Mines Co. from January to March and by the Fredericktown Lead Co. the rest of the year. In Jefferson County the Fredericktown Lead Co. ceased work on the Valle Mine property in May.

Tri-State District.—For the first three months in 1949 production of zinc and lead concentrates in the Tri-State district trended upward, and the output in March was the highest since June 1947. During the next 3 months production decreased sharply as a result of successive sharp declines in the prices of concentrates. The weekly quoted price of zinc concentrates, which was $110 a ton from January 1 through March 19, reached a low of $50 June 18, and the price of lead concentrates decreased from $290.92 a ton March 5 to $148.63 May 28. About 50 of the mines shut down, and most of the other 76 active mines curtailed production. The decrease in the June output compared with March was 36 percent for zinc concentrates and 34 percent for lead concentrates. In July the quoted price of zinc concentrates advanced to $57 a ton and lead concentrates to $183.91, but the monthly production was the lowest of the year, as the mines and mills of the Eagle-Picher Mining & Smelting Co. were shut down by a work stoppage from July 1 to August 7, and other mines shipping to the Eagle-Picher Central mill could not operate during this period. The weighted average prices from August through December were $56.18 a ton for zinc concentrates (including $2.50 a ton over the market price paid for concentrates produced in the Eagle-Picher Central Mill) and $159.95 for lead concentrates; the respective quoted market prices as of December 17 were $55.00 and $147.67. Production in the last half of the year was 37 percent less than in the first half for zinc and 21 percent for lead.

Wages of employees at all the mines were reduced substantially after the prices of concentrates declined to levels that necessitated material reductions in operating costs if mining continued.

Preliminary figures show a district total production in 1949 of 145,147 tons of zinc concentrates valued at $11,262,973 and 40,557 tons of lead concentrates valued at $7,771,696—a total value of $19,034,669 compared with $22,231,715 in 1948. The production of zinc concentrates in 1948 was 159,609 tons valued at $13,929,151 and that of lead concentrates 35,862 tons valued at $8,302,564. The output, in terms of recoverable metals, was 77,490 tons of zinc and 30,171 tons of lead in 1949 compared with 84,839 and 26,901 tons, respectively, in 1948.

The recovery from crude ore averaged 3.13 percent in zinc concentrates and 0.92 percent in lead concentrates in 1949, compared with 3.43 and 0.83 percent respectively, in 1948. About 80 mines, 15 mine mills, 1 tailing mill, and 1 slime or cleanup mill were operating in December 1949, compared with 120, 29, 4 and 3, respectively, in December 1948.

The five leading zinc-producing companies in the Tri-State district in 1949, in order of output, were: Eagle-Picher Mining & Smelting Co., Nellie B. Mining Co., National Lead Co. St. Louis Smelting & Refining Division, Federal Mining & Smelting Co., and Dines Mining Co. In lead production the companies ranked as follows: Eagle-Picher, Nellie B., Federal, National Lead, and the Harris Mining Co.

The Oklahoma area contributed 58 percent of the district total output of zinc and 67 percent of the lead in 1949. The Eagle-Picher 15,000-ton Central mill at Cardin operated at about 1/2 to 2/3 capacity except during July and the first week in August, when it was closed by a work stoppage. The mill served about 25 Eagle-Picher mines and 40 or more mines operated by other companies and individuals in the Oklahoma-Kansas or Picher field, and also handled some ore from the Oronogo Circle dump in Missouri. Among the larger Oklahoma shippers to the mill were the Eagle-Picher mines (Blue Goose, Buffalo, Gordon, Grace Walker-Royal, Hum-bah-wat-tah, John Beaver, Kenoyer, Netta, Pioke, See Sah, White, and others), the Federal Mining & Smelting Co. (Gordon, Lucky Syndicate-Howe-Ohimo), Jake Dryer Mining Co. (Southside), C. G. & C. Co. (Lucky Bill), Carpenter (Oko), W. M. & W. (Velie), Gray Wolf (Golden Hawk), McIntyre (Crystal) Mahutska (Jeff City-Eudora), Little Bill (Goodwin), and Frank Hudson (Craig). The Eagle-Picher Bird Dog mill treated slimes from mill ponds.

The Nellie B. Mining Co. operated continuously its Rialto, Lawyers, and Barbara J. mines and mills; production rates were lower after metal prices began to decline in March. The Harris Mining Co. mines and mill (Lucky Jenny) also operated throughout the year. The C & M Mining Co. operated its No. 4 (Imbeau) mine and mill steadily except during part of May. The Scott Mining Co. mines and mill and the United Zinc Smelting Corporation Royal mill (treating company and custom ore) operated during the first part of the year. The Federal Quapaw-Davenport mine was the principal custom shipper to the Royal mill. The Mission mill ran on custom ore throughout the year; the Dewey Sims Pelican mine was a substantial shipper to the mill. The Park Walton mine and mill closed in February.

The Sooner Mining Co. operated its tailing mill throughout 1949 and ranked sixth among the Tri-State companies in zinc production. The Big Chief, Cardin (Western), and Britt & Britt tailing mills operated from 2 to 4 months during the first half of the year.

The Kansas area produced 35 percent of the district total output of zinc and 29 percent of the lead. The Walter Hartley mine of the National Lead Co. St. Louis Smelting & Refining Division near Baxter Springs was again the largest individual mine producer of zinc concentrates in the Tri-State district. The ore from this mine and other company mines (including the Ballard and Moore) was treated in the No. 8 (Ballard) central mill. The Eagle-Picher Mining & Smelting Co. operated several large-producing Kansas mines (including the Big John, Foley Mullen, Webber, Westside, and Wilbur) in the Baxter Springs-Blue Mound-Treece area. The Dines Mining Co. operated its mill and the Hartley No. 1 and Stoskopf mines most of the year. Other mines operating all or part of the year were the A. & H. Mining Co. (Bendelari), Beck Mining Co. (No. 3 mill and Swalley mine), Bilharz Mining Co. (Muncie), C. K. & E. (Stebbins-Karcher), Contact, F. & G. (Lindsay), Fox Mining Co. (Robinson mine and mill), Grace Jarrett (Wright), Linda Lou (Northern), MacArthur mines, Mark Twain (Blue Mound, Naylor), Robinson Mining Co. (Douthit, Jarrett), and Bob White (Cherokee). The M. & W. and Wade-Rea mills treated custom ore. The Captain tailing mill operated 3 months. In June the Lavrion Mining Co. ceased work on unwatering and developing the Garrett property. The Bureau of Mines began work on an exploratory drilling project in the Melrose area in November.

In the Crestline and Waco areas the F. W. Evans Crutchfield and American mines at Crestline and mill at Waco operated from January through March. Glen Richey operated the Grasselli mine and Playter mill from January through April; the mill burned April 30.

In the Galena area ore was shipped from several mines to custom mills in other areas. The principal producer, the Murphy open-pit mine of Childress-Murphy Mines, Inc., was closed May 9. The Eagle-Picher lead smelter and lead- and zinc-pigment plant at Galena purchases most of the lead concentrates produced in the Tri-State district.

The Southwestern Missouri area produced 7 percent of the district total output of zinc and 4 percent of the lead. The Dale Mining Co. Dungy mine at Stark City was the only substantial producer that operated continuously throughout the year. The Federal Mining & Smelting Co. Duenweg mine, operated about 10 months, was the principal Missouri producer of zinc during the year. Other properties that operated part of the year, mostly before the sharp declines in concentrate prices, included the Navy Bean mine and mill of the Consolidated Mines Co. near Wentworth, the Glen Richey Shinn mine at Stark City, the Federal Granby-American at Granby, the High Five at Waco, and the I. N. Clark Olsen mine at Spurgeon. The St. Louis Mining & Milling Co. custom mill at Thoms Station operated intermittently. The Kansas Explorations Jasper mill operated about 4 months, treating custom ore from Galena, Kansas. The Wildwood Mining Co. remodeled its Northside mill and treated some ore. The McNabb Coal Co. worked several months on stripping at the Quick 7 mine near Neck City and had test lots of ore treated in the Snapp mill. The Bureau of Mines did exploratory drilling in the Canyon Diggings (Newton County) area.

Arkansas.—Small tonnages of lead and zinc ore were shipped from mines in the Ponca district, Newton County, by Harry Primrose and C. W. Allen. The State output, in terms of recoverable metals, was approximately 11 tons of lead and 9 tons of zinc, compared with 22 and 31 tons, respectively, in 1948.

Mine Production of Silver, Copper, Lead and Zinc in Arkansas, Kansas Missouri and Oklahoma, 1949, by States, and total 1948 in terms of Recovered Metals

(Preliminary Annual Figures)

State	Silver		Copper		Lead		Zinc		Total Value
	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
Arkansas					11	3,498	9	2,304	5,802
Kansas					8,640	2,747,520	27,503	7,040,768	9,788,288
Missouri	120,780	109,306	3,754	1,479,076	127,522	40,551,996	6,062	1,551,872	43,692,250
Oklahoma					20,227	6,432,186	44,710	11,445,760	17,877,946
Total, 1949	120,780	109,306	3,754	1,479,076	156,400	49,735,200	78,284	20,040,704	71,364,286
Total, 1948	114,187	103,345	2,370	1,028,580	127,614	45,685,812	85,892	22,847,272	69,665,009
Increase or decrease, 1949	+6,593	+5,961	+1,384	+450,496	+28,786	+4,049,388	-7,608	-2,806,568	+1,699,277

Production of Lead and Zinc in the Tri-State Region

(Preliminary figures) 1949, by areas, in short tons

Area	Material treated		Concentrates		Recoverable metal	
	Crude ore	Old tailings	Lead	Zinc	Lead	Zinc
Oklahoma	2,588,800	1,083,800	27,336	83,805	20,227	44,710
Kansas	1,495,000	504,700	11,575	51,514	8,640	27,503
Southwestern Missouri	303,400	————	1,646	9,828	1,304	5,277
Total: 1949	4,387,200	1,588,500	40,557	1/ 145,147	30,171	77,490
1948	4,314,190	2,595,903	35,862	2/ 159,609	26,901	84,839
Increase or decrease, 1949	+73,010	-1,007,403	+4,695	-14,462	+3,270	-7,349

1/ Includes 7,986 tons from old tailings.

2/ Includes 11,620 tons from old tailings.

Mine production of silver, copper, lead, and zinc in Arkansas, Kansas, Missouri, and Oklahoma in 1949, by months 1/ in terms of recovered metals

Month	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	7,730	208	12,239	6,983
February	8,000	250	13,030	8,295
March	11,030	300	14,787	9,801
April	9,000	262	12,613	9,418
May	9,850	296	12,736	6,983
June	10,960	335	12,980	6,397
July	9,915	287	10,818	1,930
August	11,800	420	14,005	5,190
September	10,850	387	13,532	5,845
October	10,400	315	13,154	5,697
November	10,700	348	13,377	5,929
December	10,545	346	13,129	5,816
Total, 1949	120,780	3,754	156,400	78,284

1/ Includes revised figures for most months.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

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MINERAL MARKET REPORTS
MMS. NO. 1819

METAL MINING IN COLORADO, 1949 - PRELIMINARY ANNUAL FIGURES

Despite the declines in prices of copper, lead, and zinc, the Colorado output of the three metals held at a remarkably steady monthly rate, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. Lead production for the year increased 7 percent over 1948 and was the highest since 1927. Copper output increased 2 percent and zinc 3 percent. All the leading base-metal producers that were active in 1948 except the Rico Argentine mine in Dolores County continued operations throughout 1949.

Silver production decreased 5 percent from 1948 and amounted to about half the annual average of the 10-year prewar period 1932-41.

Gold output decreased 37 percent and was the lowest in quantity since 1873 and in value since 1882. Nearly all mining operations in the Cripple Creek district, which in recent years produced around 35 percent of the State total gold output, were suspended in February 1949, when the shutdown of the Golden Cycle mill at Colorado Springs left the district temporarily without a market for the ore. A new local market will be provided, probably in the latter part of 1950, with completion of the Carlton custom mill being built between Cripple Creek and Victor. There were material decreases in production in other important gold districts.

The total value of the Colorado output of gold, silver, copper, lead, and zinc decreased 9 percent--from $30,155,337 in 1948 to $27,361,550 in 1949.

Preliminary figures for 1949, based on nearly complete data for 11 months, with December estimated, show a State output (in terms of recovered metals) of 98,000 fine ounces of gold, 2,850,000 fine ounces of silver, 2,350 short tons of copper, 26,800 short tons of lead, and 46,500 short tons of zinc. In 1948 the output was 154,802 ounces of gold, 3,011,011 ounces of silver, 2,298 tons of copper, 25,143 tons of lead, and 45,164 tons of zinc.

The gold output in 1949 included 13,900 ounces from placer mines compared with 13,247 ounces in 1948.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

The value of the output of each metal in 1949, at prices shown below, was: Gold $3,430,000 ($5,418,070 in 1948); silver, $2,579,250 ($2,725,117); copper, $925,900 ($997,332); lead, $8,522,400 ($9,001,194), and zinc, $11,904,000 ($12,013,624 in 1948).

The price used for gold in both years was the United States Treasury buying price of $35 per fine ounce. The prices used for silver were $0.905 per fine ounce in 1949 and $0.9050505 in 1948. The average weighted yearly price per pound of copper declined from $0.217 in 1948 to $0.197 in 1949, lead from $0.179 to $0.159, and zinc from $0.133 to $0.128.

The outputs of the five metals by counties are shown in the accompanying table.

The five leading Colorado producers of each metal, in order of output based on preliminary figures, were:

Gold: Telluride Mines (Inc.) Smuggler Union group at Telluride; Idarado Mining Co. Treasury Tunnel-Black Bear group, San Miguel County; Resurrection Mining Co. group at Leadville; Shenandoah-Dives group near Silverton; and the South Platte Dredging Co. connected-bucket dredge near Fairplay.

Silver: Shennandoah-Dives group near Silverton; Idarado Mining Co. Treasury Tunnel-Black Bear group, San Miguel County; Emperius Mining Co. group at Creede; American Smelting & Refining Co. Kokomo unit; and Eagle mine at Gilman.

Copper: Treasury Tunnel-Black Bear group (only substantial producer of copper in the State).

Lead: Resurrection group; American Smelting & Refining Co. Kokomo unit; Idarado Mining Co. Treasury Tunnel-Black Bear group; Shenandoah-Dives group (including custom ore); and Smuggler Union (Telluride Mines, Inc.) group.

Zinc: Eagle mine; American Smelting & Refining Co. Kokomo unit; Resurrection group; Treasury Tunnel-Black Bear group; and Telluride Mines (Inc.) Smuggler Union group.

Adams County.--Kerkling and Slensker recovered gold and silver as byproducts from the Brannan Sand & Gravel Co. washing plants Nos. 8 and 10 and the Superior Sand & Gravel Co. pit, all on gravel bars of Clear Creek northwest of Denver.

Boulder County.--Gold ore was shipped to the Golden Cycle mill at Colorado Springs during January and February from the Cash (Henna Mines, Inc.), Franklin, John Jay, Livingston, Parker No. 1, Twin Shaft (Gardner), and Wood Mountain mines. The Cash mine continued producing the rest of the year, shipping ore to the Leadville smelter, and was the principal county producer of gold. The John Jay and Franklin mines also shipped ore to the Leadville smelter. The Consolidated Caribou Silver Mines, Inc., operated the Caribou mine and company mill most of the year and was the principal county producer of silver. The Ozark-Mahoning and General Chemical companies shipped lead-silver-gold-copper concentrates recovered as a byproduct in the beneficiation of fluorspar.

Chaffee County.--S. E. & W. E. Burleson shipped ore to the Leadville smelter from the Garfield mine the first few months of 1949 and began shipping from the Mary Murphy the latter part of the year. The Carathers, Esther No. 1, C. Ray Miller & Son, Waite & Emerson, and Stonewall properties shipped some ore. The Good Hope Mining Co., Ltd., operated its placer several months.

Clear Creek County.--The county output of metals decreased materially after prices of lead and zinc declined in the Spring of 1949. The Grizzly Gulch mine of the Lupton Mining Co., principal producer of lead in the county in 1948, and the Smuggler mine of the Mile High Mining Co., an important silver-lead producer, were shut down. Part of the decreases from these mines were offset by increased output of silver, lead, and zinc from the Terrible-Dunderberg (Gold Mines Consolidated group). The Franklin mine continued to be a substantial producer of gold, silver, lead, and zinc. The Dixie mine, operated by LeRoy Giles & Co., was again the leading gold producer. The Lombard mine on Fall River operated, producing chiefly gold, with some silver, copper, and lead. Other producers included the Crazy Girl mine, Nabob, Bonus, Diamond Joe, Brighton, Bellevue-Hudson, Kitty Clyde, Stevens, New Era, Ruther, Tyone, P. & M., Gold Fissure, Trail Creek, Valentine, and Colorado Minerals property. The Clear Creek-Gilpin and Ruth mills at Idaho Springs operated a few months, mostly on custom ore.

Custer County.--Ore was shipped to the smelter or custom mills at Leadville from the Defender, Lady Franklin, Passiflora, and Wild Girl mines.

Dolores County.--The Rico Argentine Mining Co., one of the major producers of zinc, lead, and silver in Colorado from 1939 through 1948, suspended operation of its group of mines in May 1949 because of the declining metal prices; work during the rest of the year was confined to mine development, repairs to the mill, and remilling old tailings. Baers & Hick (Forest mine), Stamphel & Barnes (St. Louis property), and Sambo Mining Co. shipped ore to smelters and custom mills.

Eagle County.--The Eagle mine of the New Jersey Zinc Co. Empire Zinc Division at Gilman operated continuously in 1949 and continued to be the largest producer of zinc in the State. It was also one of the leading producers of silver. Most of the ore produced was treated in the company 600-ton underground flotation mill. Small tonnages of ore were shipped from the Gold Park and Tip Top claims.

El Paso County.--The Golden Cycle mill of the Golden Cycle Corp. at Colorado Springs operated in 1949 until February 20 on company and custom gold and gold-silver ores. Receipts comprised 21,068 tons of mine and dump ores from the Cripple Creek district and 311 tons from Boulder County. The mill was cleaned up and dismantled during the year.

Fremont County.--Two lots of gold ore were shipped from Canon City by the Gold Queen Mining Co. in 1949.

Garfield County.--A sample lot (less than 1 ton) of ore was shipped from Carbondale in 1949.

Gilpin County.--The Gold Chief mine and 50-ton concentration mill in the Silver Lake area were operated several months in 1949. Ore was shipped to the Leadville smelter from the Dumas-Kinney Mining Co., Independence, and Washington Day properties. Some gold was recovered from placers on North Clear

Creek. The 1,000-ton mill built near Central City in 1948 by Chain O'Mines Operators, Inc., was idle until December 5, when it was put in operation by the Illini Corp. on ore from surface workings on "the Patch" property.

Gunnison County.--The Callahan Zinc-Lead Co., Inc., operated its Akron-Erie mines and 100-ton flotation mill in the Tomichi (White Pine) district throughout 1949. The products of the mill were lead-silver concentrates and zinc concentrates. The Park City Consolidated Mines Co. shipped a substantial tonnage of zinc-lead ore from the Keystone mine near Crested Butte. Small tonnages of ore were shipped from the Louise claim, also near Crested Butte, and the Star (John Lambertson) mine group in the Tin Cup district.

Hinsdale County.--About 360 tons of ore were shipped from Hinsdale County in 1949 compared with 28 tons in 1948. Shippers in 1949 included the Yellow Medicine, Capitol City, Ute and Ulay, California, Sulphuret, Garlock, and Wehrson & Robinson mines. Cleanups at the Eldorado mill and old Lake City smelter site also yielded some ore.

Jefferson County.--The gold output from Jefferson County was recovered as a byproduct from gravel washing plants.

Lake County.--Despite curtailment in production at some mines caused by the drop in base-metal prices, the Lake County output of silver, copper, lead, and zinc in 1949 was larger than in 1948. Gold production, however, decreased. The Resurrection Mining Co., operating continuously its group of mines opened by the Resurrection shaft and Yak tunnel, was again the principal county producer of all five metals. The ore was treated in the company 600-ton selective flotation mill, which also treated custom ore from mines in Chaffee, Clear Creek, Custer, Lake, Park, Saguache and Summit counties.

The American Smelting & Refining Co. operated its 400-ton Leadville milling unit throughout the year, treating company ore from the Ibex-Garbut-Cora-Sunday group at Leadville and the Kokomo Unit in Summit County, and custom ore from Lake, Summit, Clear Creek, Gunnison, Hinsdale, Mineral, Park, Ouray, and Saguache counties.

Other producing mines in the Leadville district included the Garabaldi-Sunday, Breece (Joyce Bros.), Dahl-Shirk Lease (Fanny Rawlings), Fortune mine, Valley (Chas. A. Hopkins & Associates), New Monarch leases (Harry Sundstrom, O'Leary & Co., Fred H. Rice, Triple J. Lease), Dolly B. (McCaughan & Co.), Murcray Lease, Rock & Dome (Mines Exploration Co.), St. Louis mine, Minnie, and Little Ellen. The Cloud City and Valentine mills operated intermittently on ore from various mines or dumps.

The Arkansas Valley smelter of the American Smelting & Refining Co. operated continuously. The smelter treats lead, lead-copper-gold-silver, and gold and silver ores and concentrates purchased from operators in nearly all the active mining districts of Colorado, and concentrates, residues from zinc smelters, and other material from outside the State. Receipts in 1949 totaled about 105,000 tons compared with 97,150 tons in 1948.

In November the Bureau of Mines reactivated the Leadville drainage tunnel project, on which work began in 1943 and was discontinued September 1, 1945

The appropriation for the Department of the Interior for the fiscal year 1950 includes $250,000 cash and $250,000 contract authority for the project. The tunnel is designed to drain the mines in the Carbonate Hill, Evans Gulch, and Fryer Hill areas and part of the Downtown area; its contemplated length, including laterals, is 17,000 feet, of which 6,600 feet have already been driven. Test core drilling ahead of tunneling is being done by the Bureau staff. Bids for the tunneling are being obtained from private contractors.

In the Box Creek district the General Gold Corp., operating dragline dredges on the Mount Elbert placers, was an important gold producer.

La Plata County.--The Bessie G (Bert Thompson), Sarah G, and Muldoon mines shipped gold ore to smelters.

Mineral County.--The Emperius Mining Co. operated its several groups of mines at Creede throughout 1949. Ore was produced from the Amethyst, Commodore, New York-Volunteer-Del Monte-Aspen, and Equinox groups. Improvements were made in the mill that increased its efficiency for selective flotation, and both silver-lead concentrate and zinc concentrate were produced. Lessees at the Mexico (Ridge) mine shipped several cars of ore to the Leadville smelter and custom mill.

Ouray County.--The Ouray County output of gold decreased 1 percent in quantity from 1948, silver increased 18 percent, copper 3 percent, lead 9 percent, and zinc 4 percent. The Camp Bird mine (King Lease), leading producer of all five metals, operated continuously. The American Zinc, Lead & Smelting Co. operated its 300-ton custom flotation mill throughout the year and its Bachelor-Syracuse and Mountain King-American groups part of the year. Other producers included the Beaver-Belfast mine (Roy Van Houten lease); Ida L.(A. H. Brazil); Michael Breen (Southwest Metals); Lost Day (Ben H. Simpson); Atlas (Virginus Mines Co.); Morningside Development Co.; Minnie B; Gennessee (American Smelting & Refining Co.); and Highland Lassie (R. S. Dunn).

Park County.--The South Platte Dredging Co. operated its electrically powered bucket line dredge near Fairplay from March through December 1949 and produced most of the county output of gold. The Buckskin Joe Mines, Ltd., continued development work on the Phillips group of lode mines and shipped a substantial tonnage of gold-silver-lead-zinc ore. Some ore was shipped from the American Flag, Criterion, Sweet Home, Van Cooten, and Orphan Boy mines.

Pitkin County.--The Midnight Mine and 50-ton flotation mill operated throughout 1949. The Aspen Mining Co., subsidiary of the Anaconda Copper Mining Co., carried on exploratory drilling and crosscutting on the Smuggler-Durant group. The Bureau of Mines did exploratory drilling near Aspen during January and February.

Rio Grande County.--Jones and Nylene worked on development at the Summitville group and mined and treated some ore from the Reynolds tunnel and surface open cuts and dumps.

Saguache County.--Considerable ore was shipped from the Bonanza (Kerber Creek) district to smelters and custom mills outside the county. The producers included S. E. & W. E. Burleson (Antoro mine), Nicholas Keserich (Bonanza), Earl Wise (Brighton), Nevada Mines Co. and Garabaldi Lease

(Cora and Jupiter), A. J. Hall (Little Jenny), and Wm. J. Costello (Rawley). The John Hamm Mining & Milling Co. built a mill at Center and carried on development work at the company Crystal Hill and Esperanza mines 18 miles west of Center.

San Juan County.--Production of metals in San Juan County held up well in 1949, considering the adverse effect of the drop in base-metal prices. Lead output increased 18 percent in quantity over 1948, silver increased 10 percent, zinc increased 1 percent, copper decreased 9 percent, and gold decreased 28 percent. The total value of the output of the five metals declined 4 percent. The Shenandoah-Dives Mining Co., principal county producer for the past 21 years, operated continuously the Dives-Mayflower and Silver Lake groups of mines and the company 700-ton selective flotation mill. The mill treated about 187,800 tons of ore from company mines and 15,150 tons of custom ore from mines in San Juan County. Shippers of custom ore to the Shenandoah-Dives mill and the American Zinc, Lead & Smelting Co. mill at Ouray and to smelters included the Garry Owen mines, Mighty Monarch, Lark, Blackstone, Little Fannie, Cashier, Independence, Lucky Jack, Silver Queen, May Day, Little Nation, Silver Ledge, Caledonian-Burrows, Gold King, Golden Fleece, South Mineral, Columbus-Silver Coin (Foursome), Great Eastern-Sioux City, Queen Ann, Silver Crown, Treasure Mountain, Highland Chief, Ben Butler, Gold Prince dump, Ben Franklin dump, Terry Tunnel dump, and Silver Cloud. Other producing mines equipped with mills were the Highland Mary, Osceola, Pride of the West, and Lead Carbonate.

San Miguel County.--Despite the drop in base-metal prices in 1949, the total value of the gold, silver, copper, lead, and zinc produced in San Miguel County was higher than in 1948. The output of zinc increased 64 percent in quantity, lead 31 percent, copper 5 percent, and silver 2 percent; gold production decreased 19 percent.

The Idarado Mining Co. expanded operations on the Black Bear-Ajax group, opened by the 12,000-foot Treasury tunnel. The 1,100-foot raise on the Black Bear vein from the tunnel level was completed, and primary crushers were installed and put in operation at the raise. The company mill at the portal of the Treasury Tunnel in Ouray County operated at close to its capacity of 500 tons daily.

Telluride Mines, Inc., operating the Smuggler Union-Montana group and 550-ton mill, was the principal producer of gold in the State, as well as an important producer of silver, lead, and zinc. The Silver Bell mine and 150-ton mill at Ophir operated throughout the year, and shipped bulk gold-silver-lead-copper concentrates. Some ore was shipped by the Florence lease, George Sheahan, and Thomas H. Hudson.

Summit County.--Summit County ranked third among Colorado counties in production of lead and second in zinc. Its output of both these metals was slightly less than in 1948. The largest producer in both years was the Kokomo Unit (Victory-Wilson-McKinley group) of the American Smelting & Refining Co. This group maintained its place among the five leading producers of lead and zinc in the State. Other producers near Kokomo included the Wilfley mine, Colonel Sellers, Kokomo-Kimberly, Michigan-Snowbank, Nettie B., and Lanscanette mines.

In the Breckenridge district ore was shipped to the smelter or custom mills at Leadville from the Wellington mine (operated by Davenport & Cox), Fredonia (J. W. and Carl P. Enyeart, Jr.), Jumbo (Kostelic & Bennett), Laurium

(F. L. Harris), Monte Cristo (F. H. & E. L. Kennedy), Briar Rose, Bonanza Trust, Lancaster, Panther No. 2, and Minnie B.

At Montezuma the Florado Mining Co. operated its mine and flotation mill. The Teller Basin mine and mill operated intermittently. Crude ore was shipped to smelters from the Bell Mining Co. group, Bullion, Cross mine (E. F. Brophy), Mohawk mine, Rose (W. L. Davenport), Silver King (Summit), Silver Wing (T. W. Martin), Wauneita (Betty Jane), Waterloo-Quail-Minnie (Kelly, Brophy & Paddock), Radical, Ida Belle, and Chautauqua. In the Green Mountain district Frances L. McDaniel continued to ship ore from the Big Four mine.

Teller County.--Mines in the Cripple Creek district continued to ship ore to the Golden Cycle mill until February 20, 1949, when the mill was closed. For the rest of the year all the district mines were idle except those that worked on development and a few that shipped small tonnages of ore to smelters. The Golden Cycle Corp. worked throughout the year on building its new Carlton mill on the highway between Cripple Creek and Victor. The new mill is designed to replace the Golden Cycle mill as a market for Cripple Creek ores. Shippers of ore in January and February included the Bluebird, Le Clair, Jerry Johnson, Elkton, El Paso, Free Coinage, Midget, and Mollie Kathleen-Sangre de Cristo-Tenderfoot (Markley Mining & Exploration Co.) group.

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1949 1/ by counties, in terms of recovered or recoverable metals

County	Gold 2/		Silver 3/		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
Adams........	800	$28,000	120	$109	----	----
Boulder......	2,350	82,250	70,200	63,531	8	$3,152
Chaffee......	70	2,450	3,420	3,095	----	----
Clear Creek...	2,700	94,500	84,000	76,020	17	6,698
Custer.......	20	700	19,090	17,276	----	----
Dolores......	50	1,750	65,510	59,287	23	9,062
Douglas......	----	----	----	----	----	----
Eagle........	750	26,250	215,490	195,018	186	73,284
Fremont......	24	840	40	36	----	----
Garfield.....	1	35	1	1	----	----
Gilpin.......	110	3,850	590	534	----	----
Gunnison.....	70	2,450	53,310	48,246	15	5,910
Hinsdale.....	25	875	3,390	3,068	4	1,576
Jefferson....	30	1,050	3	3	----	----
Lake.........	17,750	621,250	233,510	211,327	175	68,950
La Plata.....	160	5,600	2,000	1,810	----	----
Mineral......	800	28,000	255,490	231,218	35	13,790
Montrose.....	----	----	----	----	----	----
Ouray........	2,450	85,750	203,310	183,996	172	67,768
Park.........	10,355	362,425	13,690	12,389	3	1,182
Pitkin.......	----	----	56,850	51,449	----	----
Rio Grande...	170	5,950	336	304	2	788
Saguache.....	200	7,000	24,810	22,453	4	1,576
San Juan.....	11,865	415,275	596,000	539,380	297	117,018
San Miguel...	32,000	1,120,000	594,000	537,570	1,338	527,172
Summit.......	2,600	91,000	351,000	317,655	71	27,974
Teller.......	12,650	442,750	3,840	3,475	----	----
Total: 1949..	98,000	3,430,000	2,850,000	2,579,250	2,350	925,900
1948..	154,802	5,418,070	3,011,011	2,725,117	2,298	997,332
Increase or decrease 1949	-56,802	-1,988,070	-161,011	-145,867	+52	-71,432

1/ Actual 11 months with December estimated.
2/ Includes placer production as follows: 1949, 13,900 ounces ($486,500); 1948, 13,247 ounces ($463,645).
3/ Includes placer production as follows: 1949, 2,850 ounces ($ 2,579); 1948, 2,812 ounces ($ 2,545).

Mine production of gold , silver, copper, lead, and zinc in Colorado in 1949, by counties, in terms of recovered or recoverable metals - Continued

County	Lead		Zinc		Total value 1949 4/	Total value 1948 5/
	Short tons	Value	Short tons	Value		
Adams........	-----	----------	-----	----------	$28,109	$16,868
Boulder.......	118	$37,524	-----	----------	186,457	102,441
Chaffee.......	42	13,356	6	$1,536	20,437	28,916
Clear Creek...	827	262,986	444	113,664	553,868	591,760
Custer........	58	18,444	37	9,472	45,892	40,776
Dolores.......	1,129	359,022	1,055	270,080	699,201	1,871,465
Douglas.......	-----	----------	-----	----------	----------	105
Eagle.........	1,576	501,168	17,317	4,433,152	5,228,872	5,339,698
Fremont.......	-----	----------	-----	----------	876	28,433
Garfield......	-----	----------	-----	----------	36	----------
Gilpin........	11	3,498	-----	----------	7,882	7,757
Gunnison......	1,306	415,308	1,490	381,440	853,354	1,255,619
Hinsdale......	42	13,356	15	3,840	22,715	2,747
Jefferson.....	-----	----------	-----	----------	1,053	1,604
Lake..........	5,501	1,749,318	5,975	1,529,600	4,180,445	4,194,749
La Plata......	-----	----------	-----	----------	7,410	7,004
Mineral.......	1,121	356,478	641	164,096	793,582	470,961
Montrose......	-----	----------	-----	----------	----------	142
Ouray.........	1,602	509,436	1,312	335,872	1,182,822	1,177,238
Park..........	114	36,252	238	60,928	473,176	382,610
Pitkin........	64	20,352	45	11,520	83,321	79,553
Rio Grande....	-----	----------	-----	----------	7,042	----------
Saguache......	354	112,572	437	111,872	255,473	206,234
San Juan......	3,536	1,124,448	1,688	432,128	2,628,249	2,727,256
San Miguel....	5,113	1,625,934	5,700	1,459,200	5,269,876	4,786,753
Summit........	4,286	1,362,948	10,100	2,585,600	4,385,177	4,955,082
Teller........	-----	----------	-----	----------	446,225	1,879,566
Total: 1949...	26,800	8,522,400	46,500	11,904,000	27,361,550	
1948...	25,143	9,001,194	45,164	12,013,624		30,155,337
Increase or decrease, 1949.	+1,657	-478,794	+1,336	-109,624	-2,793,787	

4/ Average value of metals in 1949: Gold, $35 per fine ounce; silver, $0.905 per fine ounce; copper, $0.197 per pound; lead, $0.159 per pound; zinc, $0.128 per pound.

5/ Average value of metals in 1948: Gold, $35 per fine ounce; silver, $0.905+ per fine ounce; copper, $0.217 per pound; lead, $0.179 per pound; zinc, $0.133 per pound.

Mine production of gold, silver, copper, lead, and zinc in Colorado, in 1949, by months, and in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January....	9,725	200,373	160	2,035	3,046
February...	7,298	174,634	146	1,907	3,818
March......	8,131	221,137	207	2,211	4,396
April......	6,198	213,376	144	2,316	3,915
May........	7,044	221,681	201	2,227	3,930
June.......	8,000	224,486	183	2,055	3,913
July.......	7,284	246,485	209	2,199	3,598
August.....	9,073	314,117	263	2,584	4,325
September..	10,673	290,906	219	2,482	3,832
October....	7,818	247,191	209	2,202	3,796
November...	8,448	247,452	202	2,306	4,113
December...	8,308	248,162	207	2,276	3,818
Total:					
1949....	98,000	2,850,000	2,350	26,800	46,500
1948....	154,802	3,011,011	2,298	25,143	45,164

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORT
MMS NO. 1820

MERCURY IN 1949
(Preliminary figures)

The mercury industry was featured in 1949 by unprecedented imports and by downtrending consumption, production and price, according to the Bureau of Mines, United States Department of the Interior. The major part of the metal that entered the country was for the strategic stock pile. Consumption, whereas probably 20 percent below the high peacetime rate maintained in 1948, was large in relation to other than war years. Production was less than two-thirds the reduced rate in 1948 and was the smallest since 1926, but the resumption of production by the Cordero mine in the latter part of the year, after more than a year's idleness, prevented the total for the country from dropping to the lowest level in 100 years.

The Cordero mine, Humboldt County, Nev., the Mount Jackson (including Great Eastern), Sonoma County, Calif., and Bonanza, Douglas County, Oreg., were the three largest producers in the United States and with about 11 other properties contributed the country's total. The closing of the Bonanza mine on November 30 was said to be permanent.

Salient statistics of the mercury industry in the United States in 1945-49

Year	Production (Flasks)	Consumption (Flasks)	Imports (Flasks)		Exports (Flasks)	Price per flask at New York (average
			General	For consumption		
1945------	30,763	62,429	71,508	68,617	1,038	$134.89
1946------	25,348	31,552	23,062	13,894	907	98.24
1947------	23,244	35,581	10,228	13,008	884	83.74
1948------	14,388	46,253	41,732	31,951	786	76.49
1949------	9,400	37,000	1/95,358	1/97,931	1/353	79.42

1/ Figures cover January-October only.

Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chie
Metal Economics Branch, Minerals Division.

From data for 9 months it appears that consumption in all of 1949 was about 80 percent that for 1948, when the rate was at high levels in relation to other peacetime years. Three new mercury boilers were installed during the year, the first represented a new installation at Hartford, Conn., to replace a unit in operation there for many years, the second was a new plant at Pittsfield, Mass., using part of the mercury released when a larger unit at Schenectady, N. Y., was closed, and the third at Portsmouth, N. H., presumably using new metal entirely. Consumption of mercury in the new cell did not reach expectations in 1949 but a small gain in 1950 is looked for. Electrical instruments (including the new cell) rose 18 percent in the first 9 months of 1949 compared with the like period in 1948, while industrial and control instruments fell 13 percent.

In the first 10 months of 1949 general imports of mercury were 95,358 flasks, according to the Department of Commerce. A very large part of the metal imported was destined for the Government stock pile, being mercury purchased in Europe by the Economic Cooperation Administration with counterpart funds accumulated there, and earmarked for the purchase of strategic materials. Italy was the source of 86,049 flasks, Mexico 3,241, Japan 2,913, Yugoslavia 1,913, Spain 1,236, and Canada 6.

Exports for 10 months of 1949 were 353 flasks and re-exports were 760 flasks.

The downtrend in mercury quotations generally in progress from March 1945 was reversed at the end of 1948 when the sharp mark-up took place in the price of the Spanish-Italian cartel, Mercurio Europeo. The downtrend was resumed immediately and continued virtually without interruption through 1949. The average of slightly over $79 a flask in 1949 was 4 percent above 1948. The 1949 price was close to the average annual price for 1935-38, but inasmuch as the index for wholesale prices had virtually doubled in the interim the 1949 price represented only about half of the earlier price in terms of prewar purchasing power. The price in London was £18 5s. 0d. in January 1949, moved to £18 10s. 0d. in February, and remained at that level until the pound was devalued in mid-September, after which the price was £26 5s. 0d.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE JANUARY 10, 1950.

MINERAL MARKET REPORT
MMS NO. 1821

METAL MINING IN TEXAS, 1949 - PRELIMINARY ANNUAL FIGURES

The mine output of gold, silver, copper, and lead in Texas in 1949 came from small-scale operations in Culberson, Hudspeth, and Presidio Counties, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. Preliminary figures show a total output from these operations of 40 fine ounces of gold, 2,800 fine ounces of silver, 25 short tons of copper, and 140 short tons of lead. In 1948 the production came from the same counties and totaled 57 ounces of gold, 3,065 ounces of silver, 23 tons of copper, and 170 tons of lead.

The value of the 1949 output, at prices shown below, was: Gold, $1,400 ($1,995 in 1948); silver, $2,534 ($2,774); copper, $9,850 ($9,982); and lead $44,520 ($60,860) —a total of $58,304 in 1949 compared with $75,611 in 1948.

The average metal prices used in 1949 were $35 for gold, $0.905 for silver, $0.197 for copper, and $0.159 for lead compared with 1948 prices of $35 for gold, $0.9050505 for silver, $0.217 for copper, and $0.179 for lead.

Mine production of gold, silver, copper, and lead in Texas, in 1949, by months, and in terms of recovered metal

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)
January............	3	191	4	8
February..........	5	393	6	28
March.............	2	244	3	15
April.............	5	378	6	16
May...............	2	198	3	6
June-August.......	—	—	—	—
September.........	10	548	—	26
October...........	6	351	—	18
November..........	3	240	2	13
December..........	4	257	1	10
Total: 1949......	40	2,800	25	140
1948......	57	3,065	23	170

The producing mines in 1949 were the Mary Ellen north of Van Horn in Culberson County, which shipped a car of copper-lead-silver ore; the Sancho Panza near Allamoore in Hudspeth County, which shipped several cars of copper-silver ore; the R. I. Carr leased group near Shafter, Presidio County, shipping lead-silver-gold ore, and the Silver Dome (Marfa) group northwest of Presidio, which shipped a car of lead-silver ore.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

No production of zinc was reported from newly mined Texas ore in 1949 or 1948. Some of the old zinc-bearing slag accumulated in earlier years at the El Paso Smelting Works of the American Smelting & Refining Co. was re-treated in the company slag-fuming plant put in operation in 1948. Specific data on the quantity of zinc and other metals recovered from the old slag are not available, and this output is not included in the mine production statistics.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE JANUARY 10, 1950.

MINERAL MARKET REPORT
MMS NO. 1822

METAL MINING IN OREGON, 1949 - PRELIMINARY ANNUAL FIGURES

Hampered during the early months of 1949 by a severe winter, Oregon gold production subsequently revived to surpass the 1948 output by 9 percent according to the San Francisco Office of the Bureau of Mines, United States Department of the Interior. Silver production was nearly 1 percent above 1948, and 1949 outputs of copper and lead increased, respectively, 1100 percent and 86 percent over the preceding year. The small zinc production in 1949 was the first reported since 1947.

Preliminary figures for 1949 with comparative final figures for 1945-1948 are given on accompanying tables.

The average prices (preliminary for 1949) used by the Bureau of Mines in calculating the gross values of the outputs of the metals were: - Gold, $35 per fine ounce in 1948 and 1949; silver, $0.905 plus per fine ounce in 1948 and 1949; copper, $0.217 per pound in 1948 and $0.197 in 1949; lead, $0.179 per pound in 1948 and $0.159 in 1949; zinc, $0.133 per pound in 1948 and $0.128 in 1949.

The value of the five metals in 1949 was $584,443 or 11 percent greater than the value of $527,064 in 1948. Of the State total value in 1949 gold contributed 95 percent.

GOLD AND SILVER

Placer mining in 1949 contributed most of Oregon's gold output owing largely to production from the bucket-line dredges of Baker Dredging Co., Sumpter district, Baker County and Porter & Co., Granite district, Grant County. The dragline dredge of Calhoun & Howell of Oregon Ltd. and Buffalo Gold Dredging Co. bucket-line dredge, both in the John Day region, Grant County and Brockton-Nevada Mining Syndicate's dragline equipment in the Sumpter district, Baker County made important contributions to the State total gold. Lode gold was principally from the Buffalo mine, Granite district, Grant County, operated by R. G. Amidon for the estate of Bruce Dennis, and Bartels Bros., Mining Co., Champion mine, Bohemia district, Lane County.

Silver output other than that recovered with gold from placer operations was largely from the Buffalo mine gold ore and concentrate and from Champion mine gold ore and copper concentrate treated at smelters.

COPPER, LEAD AND ZINC

Revival of mining and milling operations in the Bohemia district, Lane County late in 1949 accounted for most of the increase in base metal output from Oregon ores in 1949. Bartels Bros. Mining Co. was the State principal producer of copper and concentrate from Helena mine ore (Helena Mines, Inc. and Harold Barton) yielded zinc and some lead and copper. Some lead was recovered from Buffalo mine, Grant

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Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

County ore. The Hamlen prospect (Hamlen and Baker) in the Green Mountain district, Douglas County and Waite Minerals Inc., Cowboy group, Waldo district, Josephine County were copper properties under development during 1949.

Mine production of gold, silver, copper, lead, and zinc in Oregon, in 1949 by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January............	300	270	---	---	---
February...........	250	40	---	---	---
March..............	860	180	---	---	---
April..............	1,550	300	---	---	---
May................	1,410	250	---	---	---
June...............	2,010	720	1	---	---
July...............	1,340	2,180	2	2	---
August.............	2,200	1,640	3	3	3
September..........	1,510	1,880	8	3	3
October............	1,750	2,120	4	2	1
November...........	1,330	1,690	3	1	1
December...........	1,380	2,430	3	2	1
Total: 1949.......	15,890	13,700	24	13	9
1948.......	14,611	13,596	2	7	---

Mine production of gold, silver, copper, lead, and zinc in Oregon, 1945-1949, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945........	4,467	$156,345	10,461	$ 7,439	1	$270
1946........	17,598	615,930	6,927	5,597	7	2,268
1947........	18,979	664,265	30,379	27,493	14	5,880
1948........	14,611	511,385	13,596	12,305	2	868
1949........	15,890	556,150	13,700	12,399	24	9,456

Year	Lead		Zinc		Total Value
	Short tons	Value	Short tons	Value	
1945................	1	$172	1	$230	$164,456
1946................	2	436	---	---	624,231
1947................	12	3,456	1	242	701,336
1948................	7	2,506	---	---	527,064
1949................	13	4,134	9	2,304	584,443

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary**   JAMES BOYD, **Director**

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UNIVERSITY OF ILLINOIS

For release JANUARY 23, 1950

MINERAL MARKET REPORT
M.M.S. No. 1823

METAL MINING IN IDAHO, 1949 - PRELIMINARY ANNUAL FIGURES

In 1949, Idaho's outputs of silver and copper each declined 15 percent from those in 1948, lead 13, and zinc 14, but the output of gold increased 35 percent, according to preliminary figures released by the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. The output of silver decreased from 11,448,875 fine ounces to 9,730,000; copper from 1,624 short tons to 1,375; lead from 88,544 tons to 77,100; and zinc from 86,267 tons to 74,150. However, the output of gold increased from 58,454 fine ounces to 79,100. The losses in silver, copper, lead, and zinc resulted from the closing in August of the strike-bound Bunker Hill lead smelter at Bradley and from a drop in base metal prices; the gain in gold resulted from an increase in production at the Yellow Pine mine at Stibnite. In 1949 the State remained the largest producer of silver and zinc in the United States and the second largest producer of lead (exceeded only by Missouri). The preliminary figures for 1949 are based on actual mine production reported by operators and on receipts at smelters and the United States mints covering 10 months with November and December production calculated from other sources of information. Comparative production figures for 1945-48 are given in the table on the following page.

Idaho ores and gravels in 1949 yielded gold, silver, copper, lead, and zinc valued at $55,616,100, a drop of $12,142,190 (18 percent) from 1948. The value of the gold output was $2,768,500--5 percent of the total value; silver, $8,805,650--16 percent; copper, $541,750--1 percent; lead, $24,517,800--44 percent; and zinc, $18,982,400--34 percent.

MINING

The work stoppage from August 20 to November 19 at Bunker Hill lead smelter at Bradley coupled with substantial decreases in base metal prices during the year, caused some companies in Idaho to suspend operations and other companies to curtail operations. The output of ore dropped from 3,981,846 tons in 1948 to about 3,000,000 tons in 1949. Zinc-lead ore and old tailings (by far the chief ore output of the State) declined from 2,824,758 tons to 1,935,000, gold ore from 672,681 tons to 635,000, silver ore from 149,691 tons to 145,000, lead ore from 253,648 tons to 225,000, and zinc ore and old slag from 79,674 tons to 59,000. About 96 percent of the zinc-lead ore and old tailings, 75 percent of the lead ore, and nearly all the silver ore and zinc ore and old slag came from 64 properties in the Coeur d'Alene region; and 97 percent of the gold ore came from the Yellow Pine mine at Stibnite, Valley County. Placer mining indicated less activity throughout all districts in the State. Ten dredges (5 dragline, 4 bucketline, 1 suction) recovered about 15,800 fine ounces of gold in Idaho in 1949, compared with 15 dredges (7 dragline, 5 bucketline, 3 suction) in 1948 that recovered 20,264 fine ounces of gold.

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Production of gold, silver, copper, lead, and zinc in Idaho, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Ounces	Value	Ounces	Value	Short tons	Value
1945	17,780	$622,300	8,142,667	$5,790,341	1,548	$417,960
1946	42,975	1,504,125	6,491,104	5,244,812	1,038	336,312
1947	64,982	2,274,370	10,345,779	9,362,930	1,640	688,800
1948	58,454	2,045,890	11,448,875	10,361,810	1,624	704,816
1949	79,100	2,768,500	9,730,000	8,805,650	1,375	541,750

Year	Lead		Zinc		Total Value
	Short tons	Value	Short tons	Value	
1945	68,447	$11,772,884	83,463	$19,196,490	$37,799,975
1946	59,987	13,077,166	71,507	17,447,708	37,610,123
1947	78,944	22,735,872	83,069	20,102,698	55,164,670
1948	88,544	31,698,752	86,267	22,947,022	67,758,290
1949	77,100	24,517,800	74,150	18,982,400	55,616,100

MILLING AND SMELTING

Of the 3,000,000 tons of ore produced in 1949 in Idaho, about 2,920,000 tons (97 percent) were treated in concentration mills, 2 percent was shipped crude to smelters, and nearly 1 percent was treated in amalgamation mills. About 67 percent of the material treated in concentration mills was zinc-lead ore and old tailings, 21 percent gold ore, 5 percent silver ore, and nearly 7 percent lead ore. Current hot zinc-slag totaling 93,000 tons was fumed, which yielded 14,000 tons of deleaded zinc fume and 3,400 tons of lead fume, and 25,000 tons of old dump lead-smelter slag at Bradley were delivered for smelting and fuming.

The lead smelter and refinery of the Bunker Hill & Sullivan Mining & Concentrating Co. at Bradley operated 9 months of 1949, and the 150-ton electrolytic zinc smelter of the Sullivan Mining Co. near Bradley operated continuously throughout the year, chiefly on lead and zinc concentrates produced at mills in the Coeur d'Alene region. The capacity of the zinc smelter was increased from 110 tons of slab zinc a day to 150 tons a day. The Bunker Hill & Sullivan Mining & Concentrating Co. also operated its antimony, cadmium, and zinc slag-fuming plants at Bradley, and its 1,700-ton flotation mill (including a sink-and-float unit) and 300-ton tailing-treatment plant at Kellogg. About 36 other concentration mills, with an aggregate capacity of 13,900 tons of ore a day, operated in Idaho in 1949. In August the Bradley Mining Co. completed constructing a smelter at Stibnite, Valley County, for the reduction of the antimony and gold concentrates produced at its 2,000-ton flotation mill.

METAL PRICES

The price of gold ($35 per ounce) and the price of silver ($0.905+ per ounce), fixed by the United States Government, remained unchanged in 1948 and 1949. The average weighted yearly price of copper decreased from $0.217 a pound to $0.197; lead from $0.179 a pound to $0.159; and zinc from $0.133 a pound to $0.128. The market price of lead began dropping in March, and in June it reached a low of 12 cents a pound; the price of zinc began declining in March also, and it reached a low of 9.4 cents a pound in July; the price of copper began dropping in April, and it reached a low of 16.3 cents a pound in June.

GOLD

The output of gold in Idaho increased in 1949 to 79,100 fine ounces, a gain of 20,646 fine ounces over that of 1948. The increase was entirely from lode mines as the output from placer properties decreased about 4,500 ounces. Gold from lode mines in 1949 was 62,800 fine ounces compared with 37,678 fine ounces in 1948, and that from placer properties was 16,300 fine ounces compared with 20,776 fine ounces. About 68 percent of the gold produced in Idaho in 1949 was recovered from gold-silver-antimony ore from the Yellow Pine mine at Stibnite and 19 percent from bucket-line and dragline dredging in the Boise Basin, Elk City, and Yankee Fork districts. Bucket-line dredges were operated at Idaho City and Centerville, Boise County; and at Elk City, Idaho County. Dragline dredges were operated on Jordan Creek, Custer County; and on the South Fork of Clearwater River and on American River, Idaho County. Large producers of placer gold, that suspended operations in 1949, were Baumhoff-Marshall, Inc. (bucket-line dredge at Centerville) and H. & H. Mines, Inc. (Bucket-line dredge at Elk City). In 1949 the Bradley Mining Co. (Yellow Pine mine at Stibnite) nearly doubled its 1948 gold output and was again by far the largest producer of gold in Idaho; it was followed by the Idaho-Canadian Dredging Co. at Idaho City, Warren Dredging Co. at Elk City, Jordan Placers dredge near Sunbeam, Talache Mines, Inc., (gold ore) at Atlanta, and Triumph Mining Co. (zinc-lead ore) at Triumph.

SILVER

The output of silver in Idaho in 1949 was 9,730,000 ounces, a drop of 1,718,875 ounces from that in 1948. Most of the loss occurred in the Coeur d'Alene region, Shoshone County, where the principal producers of silver in the State are located. About 49 percent of the State output of silver in 1949 was recovered from silver ore, 38 percent from zinc-lead ore and old tailings, and the remainder largely from gold-silver-antimony ore and lead ore. The Sunshine mine remained the largest producer of silver in the State, although its output in 1949 was 21 percent less than that in 1948; it was followed by the Bunker Hill & Sullivan, Polaris, Silver Dollar, Page, Day Mines, Inc., Triumph, Lucky Friday, Star, Morning, Sidney, Silver Summit, Silver Syndicate, and Bunker Hill & Sullivan tailing properties; all except the Triumph mine are in the Coeur d'Alene region. The Coeur d'Alene region produced 92 percent of the State total silver in 1949; the remainder came largely from the Warm Springs, Yellow Pine and Bayhorse districts.

COPPER

The copper output of Idaho in 1949 was approximately 1,375 tons, a drop of about 250 tons from that in 1948; most of the copper was recovered as a byproduct in the treatment of silver ore and zinc-lead ore and old tailings from mines in the Coeur d'Alene region. The principal producers of copper in 1949 were the Sunshine, Bunker Hill & Sullivan, Polaris, Silver Dollar, and Triumph properties, all in the Coeur d'Alene region except the Triumph.

LEAD

Idaho's output of recoverable lead decreased to 77,100 tons in 1949, a drop of 11,444 tons from that in 1948. The Bunker Hill & Sullivan mine remained the largest lead producer in Idaho in 1949, although its output declined 13 percent from that in 1948. Other large producers of lead in order of output were the Page, Day Mines, Inc., Star, Morning, Sidney, Sunshine, Triumph, Bunker Hill & Sullivan tailings, Frisco, Spokane-Idaho, Highland-Surprise, and Polaris properties; the first 10 properties--each with an output of more than 2,200 tons of lead--produced 85 percent of the State total. About 93 percent of the State lead output came from properties in the Coeur d'Alene region; the remainder came largely from the Warm Springs, Alder Creek, and Bayhorse districts. Zinc-lead ore and old tailings supplied 30 percent of the total lead, and lead ore and silver ore most of the remainder.

ZINC

The output of recoverable zinc in Idaho dropped to 74,150 tons in 1949, a loss of 12,117 tons from that in 1948. The Star mine near Burke in the Coeur d'Alene region remained the largest producer of zinc in Idaho in 1949; it was followed by the Page, Day Mines, Inc., Morning, Sidney, Bunker Hill & Sullivan mine, Frisco, Spokane-Idaho, and Highland-Surprise properties and Bunker Hill smelter slag dump. These 10 properties, all in the Coeur d'Alene region, produced 85 percent of the State total. About 96 percent of the State total zinc in 1949 came from the Coeur d'Alene region, and most of the remainder from the Warm Springs, Bayhorse, and Alder Creek districts.

COEUR D'ALENE REGION PRODUCTION IN 1949

The production of gold from the Coeur d'Alene region decreased from 3,362 ounces in 1948 to about 2,800 ounces in 1949, silver from 10,598,338 ounces to 9,000,000, copper from 1,388 tons to 1,100, lead from 82,587 tons to 72,000, and zinc from 83,801 tons to 71,500. The value of the five metals was approximately $49,876,400 in 1949, a drop of $12,292,555 (20 percent) from that in 1948.

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January----------	2,365	840,600	100	8,165	7,455
February---------	2,660	937,300	110	7,040	6,285
March------------	3,960	1,047,200	145	8,470	7,430
April------------	5,340	1,120,600	150	8,115	7,245
May--------------	7,190	1,237,000	185	8,030	7,110
June-------------	8,480	991,000	140	7,455	7,200
July-------------	8,570	836,000	130	6,640	6,495
August-----------	7,260	995,500	135	6,915	6,535
September--------	9,015	321,000	60	3,305	4,315
October----------	8,800	200,000	40	2,700	3,750
November---------	8,060	375,800	60	3,765	4,330
December---------	7,400	778,000	120	6,500	6,000
Total: 1949--	79,100	9,730,000	1,375	77,100	74,150
1948--	58,454	11,448,875	1,624	88,544	86,267

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MINERAL INDUSTRY SURVEYS

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For release JANUARY 17, 1950

MINERAL MARKET REPORT
M.M.S. No. 1824

METAL MINING IN CALIFORNIA, 1949 - PRELIMINARY ANNUAL FIGURES

Increased output from California base metal mines in 1949 reversed the downward trend of 1948 in production of lead, zinc, and copper as well as silver according to the San Francisco office of the Bureau of Mines, United States Department of the Interior, whereas gold output decreased 3 percent compared with 1948, continuing the decline which followed 1947, the post-war peak year of gold production. Zinc gained 37 percent, copper, 37 percent, lead, 11, percent, and silver, 8 percent.

Preliminary figures for 1949, with comparative final figures for 1945-1948 are given on accompanying tables.

The value of the five metals in 1949 was $20,422,671, a 1 percent increase over the value of $20,294,093 in 1948. Of the State total value in 1949, gold contributed 70 percent, lead, 16 percent, zinc, 9 percent, silver, 4 percent, and copper, 1 percent.

The average prices (preliminary for 1949) used in calculating the gross values of the outputs of the metals were:- Gold, $35 per fine ounce in 1948 and 1949; silver, $0.905+ per fine ounce in 1948 and 1949; copper, $0.217 per pound in 1948 and $0.197 in 1949; lead, $0.179 per pound in 1948 and $0.159 in 1949; zinc, $0.133 per pound in 1948 and $0.128 in 1949.

GOLD

Based upon the 1949 preliminary figures which include estimates for the year, output of "natural gold" sold at premium prices, placer mines contributed approximately 61 percent of the 1949 output and lode mines 39 percent. In 1948, placer mines contributed 68 percent and lode mines 32 percent. Following the pattern of recent years, bucket-line dredges produced the major part of 1949 placer gold; leading producers were Yuba Consolidated Gold Fields which operated dredges in Yuba, Butte and Siskiyou Counties and the fleet of dredges operated by Natomas Co. in the Folsom district, Sacramento County. Dragline dredging was less active in 1949 than formerly, and hydraulic and drift mines were worked sporadically only during the year. New placer developments during 1949 included Fairway Placers, a bucket-line dredge near Minersville, Trinity County and Crescent Pacific Mining Co. operation on the middle fork of the Yuba River, Nevada County. Bucket-line dredges, respectively, of Tuolumne Gold Dredging Co. in Stanislaus County, Merced Dredging Co. in Merced County, Lancha Plana Gold Dredging Co. in Butte and Sacramento Counties and Thurman & Wright in Sacramento County closed down during 1949. Leading lode mines in 1949 were Idaho Maryland Mines Corp. and Empire Star Mines Co., Ltd. properties, largely lessee operated, in the Grass Valley-Nevada City district, Nevada County. Other producers that contributed substantially to the State total lode gold were:- Central Eureka Mining Co. Old Eureka Mine, Mother Lode district, Amador County; the Original Sixteen

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Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division. The cooperation of the California Department of Natural Resources, Division of Mines, is acknowledged.

to One Mine, Inc. Original Sixteen to One mine, Alleghany district, Sierra County; Mount Gaines Mining Co. Mount Gaines mine, Hunter Valley district, Mariposa County, and Burton Bros. which operated the Cactus and Tropico mines and a custom mill in the Mojave district, Kern County.

SILVER

Reflecting the increase in base metal production, the yield of silver from argentiferous lead, zinc-lead and zinc-copper ores was about 85 percent of the 1949 California silver production. Anaconda Copper Mining Co. Darwin group of mines, Coso district and Shoshone group, Resting Springs district, both in Inyo County, as in the previous year, contributed a large percentage of the State 1949 total silver.

COPPER

Except for minor tonnages of copper ore treated in 1949, materials mined principally for metals other than copper accounted for its total production in 1949. Tungsten ore from the United States Vanadium Corp. Pine Creek mine, Bishop district, Inyo County and Coronado Copper & Zinc Co. Afterthought mine, Cow Creek district, Shasta County (complex zinc-copper ore) were important sources of California copper in 1949.

LEAD AND ZINC

Average monthly outputs of lead and zinc in 1949 were in excess of 1948 until July, following lowering of base metal prices, when the impact of shutdowns of Anaconda Copper Mining Co. Darwin group of mines (California's leading producer of lead and zinc in 1949) and Coronado Copper & Zinc Co. Afterthought mine was felt. The Darwin group reopened in September and its output with expanded lead production at Anaconda's Shoshone group maintained California as a zinc and lead producer. Other important lead and zinc mines operated in California during 1949, included:- the Defense mine (Foreman & Skinner) and Minnietta mine (Finley & Vignich) Modoc district, Inyo County (lead ore), Penn mine (Penn Chemical Co.) Campo Seco district, Calaveras County (zinc ore), Carbonate King Zinc mine (J. Q. Little), zinc ore, and the Mohawk group (Mohawk Mines Inc. and Altana Corp.) lead ore, Clark Mountain district, San Bernardino County. The American Smelting and Refining Co. smelter at Selby operated in 1949 until late November when a trade dispute caused a shutdown of the plant.

Mine production of gold, silver, copper, lead, and zinc in California, 1945-1949, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945	147,938	$5,177,830	986,798	$701,723	6,473	$1,747,710
1946	356,824	12,488,840	1,342,651	1,084,862	4,240	1,373,760
1947	431,415	15,099,525	1,597,442	1,445,685	2,407	1,010,940
1948	421,473	14,751,555	724,771	655,954	481	208,754
1949	410,310	14,360,850	786,300	711,641	660	260,040

Year	Lead		Zinc		Total Value
	Short tons	Value	Short tons	Value	
1945	7,224	$1,242,528	9,923	$2,282,290	$11,152,081
1946	9,923	2,163,214	6,877	1,677,988	18,788,664
1947	10,080	2,903,040	5,415	1,310,430	21,769,620
1948	9,110	3,261,380	5,325	1,416,450	20,294,093
1949	10,130	3,221,340	7,300	1,868,800	20,422,671

Mine production of gold, silver, copper, lead, and zinc in California, in 1949 by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	30,170	62,790	80	810	600
February	32,090	73,880	70	1,010	810
March	34,660	73,350	110	940	1,060
April	35,620	82,900	70	880	950
May	32,810	79,270	80	860	820
June	35,210	66,550	60	910	630
July	33,850	30,430	30	450	90
August	35,180	30,410	30	360	150
September	34,250	55,600	30	710	290
October	36,200	80,440	30	1,100	650
November	34,920	74,270	30	1,010	610
December	35,350	76,410	40	1,090	640
Total:1 1949	410,310	786,300	660	10,130	7,300
1948	421,473	724,771	481	9,110	5,325

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

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MINERAL MARKET REPORTS
MMS NO. 1825.

IRON ORE IN 1949 - PRELIMINARY

The United States supply of iron ore overtook a diminishing demand in 1949, which with industry-wide strikes during October and part of November, effected a decrease in production of 16 percent from 1948, according to the Bureau of Mines, United States Department of the Interior. Shipments from mines also fell 16 percent to an estimated 84,500,000 gross tons from the previous year's actual 100,821,714 gross tons. Estimated production from all United States mines was 84,931,000 tons compared with 101,003,492 tons in 1948. Ore shipments reflected the reduced activit in the steel industry as early as July, with June as the last month in which shipments exceeded those of the previous year. Nevertheless, until the steel strike was called on October 1, cumulative 1949 shipments were slightly greater than for the same period in 1948. Anticipation of the strike would account for this fact, and it is doubtful if total shipments for the year would have been much higher if the strik had not occurred.

Of the total domestic shipments in 1949, the Lake Superior district supplied 81 percent, Southeastern States 9 percent, Northeastern States 4 percent, Western States 5 percent, and undistributed (byproduct ore) 1 percent. Minnesota produced a total of 56,400,000 tons or 67 percent of the national total. The importance of the Lake district continued to decline in relation to the total domestic production. From 85 percent in 1945, the District production has declined at a rate of approximately 1 percent per year. In addition, the three largest companies are actively seeking to develop foreign sources, and one of these expects to begin commercial shipments in 1950. Thus, with prospects of greatly increased imports, dependency upon Lake Superior ores is reduced further.

The value of 1949 shipments was estimated to be $392,000,000 f.o.b. mines, indicating an average value of $4.64 per gross ton. An increase in the quoted price of Lake Superior ores, amounting to $1.00 per gross ton helped prevent a large decline in the total value of 1949 shipments. Accordingly, with shipments reduced 16 percent from 1948 levels, value of the shipments decreased only 1 percent.

Stocks of ore at all United States mines on December 31, 1949 were 5,878,000 gross tons compared with 6,371,603 tons at the end of 1948, a drop of 8 percent.

States producing iron ore in 1949 were the same as those in 1948. However, some new mines were brought into production while a few mines ceased production because their merchantable ore was exhausted. Three States, Delaware, Tennessee and Virginia produced 594,000 gross tons of metallurgical byproduct ore obtained from treating pyrites.

Prepared by Norwood B. Melcher under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Lake Superior District. -- To offset the trend toward a decline in the relative importance of the Lake Superior region as a source of iron ore, this district, encompassing Michigan, Minnesota and Wisconsin, installed additional and improved equipment for increased beneficiation of crude ores in 1949. Efforts to reduce the drain on reserves of direct shipping ore have resulted in a number of mines installing modern methods and equipment. In the future, production from underground operations will undoubtedly be increased in order to maintain the high quality and quantity of Lake district ores.

Production and shipments from the Lake Superior district was 68,927,000 tons and 68,340,000 tons, respectively. Estimated value of the shipments was $310,000,000 or an average value of $4.54 per ton at the mines. Compared with 1948 figures, average value per ton of ore has increased 21 percent, while production and shipments have decreased 17 percent each. In addition to the above tonnage, the Cuyuna range in Crow Wing County, Minnesota produced and shipped an estimated 842,000 tons of ore containing 5 to 10 percent manganese.

The Lake shipping season was afforded an early opening this year when the steamer W. H. McGean began loading March 27 at Two Harbors, Minnesota, only one day later than the earliest opening date on record (March 26, 1942). The strike interrupted shipping for approximately six weeks, but only 33 days were devoid of departures because it was agreed to allow ore shipments in transit to the docks and at the docks to proceed. Mining operations and shipments resumed November 15 and continued through December 4. The last ship loaded was the Steamship E. T. Weir which cleared the Great Northern docks at Superior on that date. In 1948 the Lakes opened April 5 and closed December 9.

Mine stocks in the Lake Superior district totaled an estimated 4,213,000 tons on December 31, compared with an actual 5,197,214 tons December 31, 1948.

Southeastern District. -- Production in the district that includes Alabama, Georgia and Virginia, decreased 11 percent to an estimated 7,444,000 tons from an actual 8,365,390 tons in 1948. Shipments dropped 10 percent to 7,434,000 tons valued at $33,000,000 giving an average value of $4.44 per ton at the mines. Alabama accounted for 98 percent of both production and shipments with its Jefferson County mines as the principal source. Georgia mined soft brown ore from relatively small open pits for blending with the lower grade hard hematite from Alabama mines, while Virginia's small shipments of brown ore were used as pigment in making paint.

Northeastern District. -- Production and shipments of iron ore in New Jersey, New York and Pennsylvania were 3,778,000 tons and 3,770,000 tons, respectively. Decreases from 1948 levels paralleled closely those of the Lake district; 15 percent in production and 16 percent in shipments. Value of the shipments is estimated at $34,000,000 or an average of $9.02 per gross ton. Nearly all the product of the Northeastern district consists of hard magnetite which must be crushed and concentrated. The concentrates, in most cases, are sintered to form a suitable furnace charge with respect to porosity and size. The higher average value of the Eastern magnetite ores is possible because the beneficiated product is high in iron content, and the physical character makes it very desirable as a blast furnace feed.

Western States. -- Production of ore in California, Missouri, Nevada, Texas, Utah, Washington and Wyoming is more closely geared to the requirements of the consuming furnaces than in the Lake Superior district where much ore is purchased on a season to season contract basis. As a result, ore production figures reflect current economic conditions quickly. Reduced ore production and shipments were apparent in April compared with July in the Lake Superior district. Total production for the year is estimated at 4,238,000 tons and shipments 4,357,000 tons.
Comparable figures for 1948 show that production fell 17 percent from 5,104,703 tons and shipments dropped 16 percent from 5,194,485 tons. Here again, the downtrend followed that in the Lake Superior district. Value of the shipments was an estimated $11,000,000, an average value of $2.52 per ton.

Utah remains the largest producer in this district supplying 2,580,000 tons or 59 percent of the total. Utah's product goes to furnaces in Provo and Geneva, Utah; Fontana, Calif., and Pueblo, Colo. Texas furnaces obtain most of their ore from within the State, while the Fontana furnaces use California ore from mines in San Bernardino County. Washington and Nevada ores represent small tonnages used in making cement and as a ballast in seagoing vessels.

Byproduct Ore. -- Production of byproduct ore gained 24 percent over 1948 to reach 594,000 tons in 1949, and although the producers were unable to market their ore during the steel strike, overall shipments for the year achieved a total of 599,000 tons, an increase of 10 percent over the shipments of 1948. This sinter and cinder consists of the residue obtained when iron pyrites are roasted to give off the sulfur dioxide gas used in the manufacture of sulfuric acid. Although the tonnage is small, the product has a ready market because of its high iron content. Any remaining sulfur in the residue is removed by oxidation in the sintering process.

Imports. -- The United States imported an estimated 7,400,000 gross tons of iron ore from 18 countries in 1949. Chile, Sweden and Canada were the outstanding sources, with Chile supplying 34 percent, Sweden 32 percent and Canada 20 percent. The trend towards greater use of foreign ores continued, and the imports last year were 21 percent more than in the previous year. In relation to the total supply, imported ores accounted for 3 percent in 1940, 5 percent in 1947, 6 percent in 1948 and 8 percent in 1949. Current activities of several large steel companies in cooperation with industry and Government in Venezuela, Canada and Liberia are developing important deposits of iron ore, and these sources will augment the United States foreign supply materially within the next few years.

Venezuela has extensive surface deposits of high grade ore in the area paralelling the south bank of the Orinocco River. The Bethlehem Steel Co. expects to start shipments of ore mined from deposits at El Pao early in 1950. Tug-drawn barges will carry the ore down the river from Palua to a deep water terminal which is nearing completion at Puerto Hierro. There, Bethlehem's large seagoing ore carriers will load for shipment to Sparrows Point, Md. Concessions have also been granted by Venezuela to the Oliver Iron Mining Co. Development and exploration on these concessions continued in 1949 but no projected date has been set for initial shipments.

In Liberia, the Republic Steel Corp. has under development an ore body at Bomi Hills about 45 miles inland from Monrovia. The ore is a desirable hard lump variety of very high iron content. Substantial reserves have been proven.

The Quebec-Labrador deposits of Canada were still some years from the production stage at the end of 1949. Exploration continued, and the proposed railroad to the district from Seven Islands on the St. Lawrence was nearing the construction stage. Plans call for rail laying to proceed from each end with a road suitable for hauling supplies along the right-of-way.

Estimates of Iron Ore Produced and Shipped in the United States in 1949 and Actual Output in 1948

District and State	Ore produced		Ore shipped			
	1948	1949	1948		1949	
	Gross tons	Gross tons	Gross tons	Value	Gross tons	Value
Lake Superior:						
Michigan	13,102,086	10,981,000	12,896,478	$53,246,591	10,569,000	$310,000,000
Minnesota	68,035,740	56,550,000	67,923,237	249,523,078	56,400,000	
Wisconsin	1,492,604	1,396,000	1,468,953	(1)	1,371,000	
	82,630,430	68,927.000	82,288,668	(1)	68,340,000	310,000,000
Southeastern States:						
Alabama	8,088,664	7,273,000	8,024,052	32,543,713	7,263,000	33,000,000
Georgia	276,726	171,000	276,726	788,773	171,000	
Virginia						
	8,365,390	7,444,000	8,300,778	33,332,486	7,434,000	33,000,000
Northeastern States:						
New Jersey	436,567	393,000	436,372	3,739,985	393,000	34,000,000
New York	3,986,404	2,401,000	4,054,662	33,426,098	2,391,000	
Pennsylvania		984,000			986,000	
	4,422,971	3,778,000	4,491,034	37,166,083	3,770,000	34,000,000
Western States:						
Utah	3,233,413	2,583,000	3,233,122	3,926,058	2,580,000	11,000,000
California	153,684	487,000	345,863	7,979,143	534,000	
Wyoming	689,591	563,000	689,591		563,000	
Texas	1,028,015	464,000	925,909		539,000	
Other		141,000			141,000	
	5,104,703	4,238,000	5,194,485	11,905,201	4,357,000	11,000,000
Byproduct ore 2/	479,998	594,000	546,749	3,230,867	599,000	4,000,000
Grand total	101,003,492	84,981,000	100,821,714	394,460,751	84,500,000	392,000,000

1/ Included in grand total.
2/ Obtained from treating pyrites in, but not necessarily mined in Delaware, Tennessee and Virginia.

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BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary

JAMES BOYD, Director

UNIVERSITY OF ILLINOIS

For release JANUARY 17, 1950

MINERAL MARKET REPORT
MMS NO. 1826

MINERAL PRODUCTION IN ALASKA, 1949 - PRELIMINARY FIGURES

Although gold continued to be the commodity with the greatest value of output in Alaska in 1949, a lower production -- for the second consecutive year -- was largely responsible for the decline in value of mineral output in the Territory to

Mineral production of Alaska 1948-49 1/

	1948		1949 1/	
	Quantity	Value	Quantity	Value
Antimony ore------------short tons---	68	$29,336	70	$25,900
Coal, bituminous, and lignite--do----	408,000	2,790,720	430,000	2,205,900
Copper-------------------------do----	16	6,944	2	788
Gold--------------------Troy ounces--	248,395	8,693,825	220,903	7,731,605
Lead----------------------short tons-	329	117,782	70	22,260
Mercury-------flasks (76 pounds)-----	100	7,649	(2)	(2)
Platinum metals, crude--troy ounces--	(2)	(2)	(2)	(2)
Silver---------------------do-------	67,341	60,947	36,230	32,788
Tin--------------------short tons---	6	(2)	36	(2)
Tungsten (60 percent concentrates) 3/ short tons---	-------	---------	-------	---------
Zinc-------------------------do------	22	5,852	-------	---------
Miscellaneous 4/--------------------	-------	1,314,749	-------	1,336,447
Total--------------------------	-------	13,028,000	-------	11,355,000

1/ All figures for 1949 are preliminary and subject to revision.
2/ Bureau of Mines not at liberty to publish separately; value included with miscellaneous.
3/ Shipments.
4/ Comprises value of sand and gravel, stone, clay, pumice, and items indicated by "(2)".

Prepared by Alfred L. Ransome, Juneau Office, under the supervision of Charles W. Merrill, Chief, Metal Economics Branch, Minerals Division.

$11,355,000 from $13,028,000 in 1948, according to the Juneau Office of the Bureau of Mines, United States Department of the Interior. Coal ranked second to gold in value of output, and platinum mining continued to be an important factor in the mineral industry with production of crude platinum-group metals exceeding that of the previous year. The output of silver was only a little more than half, and lead one-fifth of the 1948 production. Copper production -- entirely as a byproduct from other ores -- remained minor. Production of tin was small but substantially above the 1948 level.

GOLD, SILVER, COPPER, AND LEAD

The Alaska production in 1949 (preliminary estimates in terms of recoverable metal) was 220,903 fine ounces of gold valued at $7,731,605 (compared with 248,395 ounces valued at $8,693,825 in 1948); 36,230 ounces of silver valued at $32,788 (67,341 ounces at $60,947 in 1948); 2 short tons of copper valued at $788 (16 tons at $6,944 in 1948); and 70 tons of lead valued at $22,260 (392 tons at $117,782 in 1948). No zinc was reported produced during 1949. The total value of the output of the four metals was $7,787,441 compared with $8,885,350 for five metals (including 22 tons of zinc valued at $5,852) produced in 1948.

Average metal prices used in 1949 (preliminary) were: Gold $35 a fine ounce; silver, $0.905 a fine ounce; copper, $0.197 a pound; and lead, $0.159 a pound. The prices in 1948 were: $35 for gold, $0.905 for silver, $0.217 for copper, $0.179 for lead, and $0.133 for zinc.

Gold. - The 11-percent decrease in production of gold in 1948, as based on 10-months' receipts at mints and smelters and estimates for November and December, marks the second year of declining output since the postwar high point of 279,988 ounces was reached in 1947. Although the supply of labor was better than at any time since the war, the narrowing margin between high operating costs and the $35 per fine ounce official price for gold was not conducive to operation of any but the more efficient enterprises. "Natural" gold continued to be sold on the open market at prices varying from three to five dollars over the official price, but the quantity involved in such transactions during 1949 is not known. In 1948, an estimated 18,000 ounces of natural gold from Alaska mines were sold.

Mine production of gold, silver, copper, and lead in Alaska in 1949, by months, in terms of recovered metals
(Based on mint and smelter receipts 1/)

	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)
January	----------	----------	----------	----------
February	19	7	----------	----------
March	29	4	----------	----------
April	644	297	----------	2
May	10,142	1,472	----------	1
June	21,518	3,244	----------	----------
July	23,875	3,420	----------	----------
August	37,143	5,607	----------	----------
September	33,852	5,772	----------	22
October	58,181	9,407	1	15
November	20,500	4,000	1	15
December	15,000	3,000	----------	15
Total	220,903	36,230	2	70

1/ Data are adjusted to exclude receipts during the first part of 1949 previously credited to 1948 production, and to include expected receipts in 1950 which are a part of actual output in 1949.

More than 95 percent of the total Alaska gold output in 1949 came from placer mines, the greater part coming from the operation of bucket-line dredges. The principal producer of gold in Alaska in 1949 was the United States Smelting, Refining and Mining Co., which operated 5 dredges in the Fairbanks district, and 2 dredges in the Nome district at various times during the year.

Although output of gold from active lode mines remained relatively small, the total was increased substantially as the result of production from the Independence mine, Willow Creek district which resumed operation late in the season after being inactive since 1946. A substantial quantity of gold was recovered by reworking old tailings from the Alaska Juneau, Thane, and Treadwell mills on Gastineau Channel. The Alaska Juneau mine continued inactive.

Silver. - The production of 36,230 fine ounces of silver in 1949 (a 46-percent decrease from 1948) was largely the byproduct of gold mining (principally bucket-line dredge operations in the Fairbanks district) and lead ore (produced from the Riverside mine, Hyder district, Southeastern Alaska region).

Copper and lead. - In 1949, as in 1948, production of lead was limited almost entirely to output from the Riverside mine near Hyder in Southeastern Alaska. Copper was recovered as a byproduct from lead concentrates shipped from this mine to smelters in the United States.

OTHER MINERALS

Antimony. - Production of antimony in Alaska in 1949 was small. Earl Pilgrim operated the Stampede mine, Kantishna and shipped antimony concentrates. Howard Sparks did development work at the Tolovana mine, Fairbanks district, and set up a small flotation plant for the production of antimony concentrates; no shipments were made.

Coal. - Alaska produced 430,000 short tons (preliminary figures) of bituminous coal and lignite in 1949, 5 percent more than in 1948 but due to a lower unit price the value declined 21 percent from the all-time peak established in 1948. Several additional properties were operated in 1949, but the largest proportion of the output, as heretofore, came from mines in the Matanuska Valley field and the Nenana field.

Platinum Metals. - Placer deposits in the Goodnews Bay district, Kuskokwim region, continued to yield a substantial quantity of crude platinum metals; the output in 1949 was higher than in 1948.

Tin. - The Northern Tin Co. recovered placer tin from Buck Creek; and the U. S. Tin Corporation shipped 43 tons of concentrates containing 54 percent tin from its Lost River operation in the Port Clarence district, Seward Peninsula region.

Tungsten. - Little or no tungsten concentrates were produced in Alaska in 1949. The J. H. Scott Co., operating the Riverside mine near Hyder, reported no shipments of tungsten concentrates during 1949.

Miscellaneous Minerals. - As of the end of December, no information had been received regarding production of asbestos, chromite, clay, gem stones, petroleum, or pumice in Alaska during 1949.

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MINERAL MARKET REPORT NO. 1827
(Replaces November and December
Monthly reports 102 and 103

MINE PRODUCTION OF COPPER IN THE UNITED STATES IN 1949 - PRELIMINARY ANNUAL FIGURES

Mine output of recoverable copper fell 11 percent in 1949 compared with 1948 and was the smallest since 1939, except for strike-ridden 1946, according to the Bureau of Mines, United States Department of the Interior. The continuing labor strike at the Utah Copper mine, largest producer in the country, lasting to February 7, and the drop in demand and price in mid-year followed by reductions in length of the work week at virtually all leading copper-producing mines and some mine closings were responsible for the lower production in 1949. There was an abrupt recovery in demand, followed by an immediate upturn in the price from the June low of 16 cents. At the end of December operations were again largely on a 6-day week basis. Production in December was 12 percent above the low point of the downtrend, reached in August, but was only 80 percent of the March rate, which was the highest for the year.

Production was lower in 1949 than in 1948 in all of the chief copper-producing areas; Michigan (32 percent), New Mexico (25 percent), Nevada (17 percent), and Utah (15 percent), in the order named, had larger percentage declines than the average for the United States (11 percent). Montana (8 percent) and Arizona (5 percent)fell proportionately less than the country as a whole.

Industrial demand for copper for the year as a whole was at a high peacetime level though somewhat under peak rates. The swing in demand during the year coincide with the slump and recovery in general industrial activity, but both the downward and upward copper movements appeared to be more precipitous.

A bill extending suspension of the excise tax on copper for 15 months, for April 1, 1949 to June 30, 1950, was signed by President Truman late on March 31. There was little opposition to this extension, but after the market broke, almost coincident with the signing of the bill, several unsuccessful attempts were made to withdraw the suspension law. During the period of suspension the excise tax has been reduced from 4 to 2 cents a pound.

Efforts to pass mine subsidy legislation did not come to fruition in 1949.

The average price for electrolytic copper f.o.b. Connecticut Valley dropped from 23.5 cents a pound in March to 16 cents in mid-June, and thereafter rose to 18.50 cents early in November, at which level it continued beyond the end of the

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Prepared by Helena M. Meyer, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

year. The average of 19.50 cents for 1949 was 13 percent below the average of 22.34 cents for 1948.

This report which summarizes mine output for 1949 is part of the regular monthly copper mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1950. The following table and State reviews for 1949, except for States east of the Mississippi, were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable copper content of ores and concentrates.

Arizona. - As usual Arizona ranked far in front of all other copper-producing areas; production was 86 percent above that in Utah, the closest competitor. The 5-percent decline in output in Arizona was the smallest sustained by important producers. Production came from a number of important districts and mines whereas one mine and district dominated copper in Utah. The Morenci mine remained by far the largest producer of copper in Arizona and was followed in 1949 by New Cornelia, Inspiration, Miami, Castle Dome, Magma, United Verde, Kennecott (Ray), Copper Queen, and Bagdad. These ten mines contributed 352,000 tons, compared with 370,120 in 1948, or 99 percent of the State total in both years. The chief copper-producing districts in order of output in 1949, with 1948 outputs in parentheses, were as follows: Copper Mountain (Morenci) district, 138,800 (148,316) tons; Globe (Inspiration-Miami) district, 79,000 (88,478); Ajo district, 55,900 (55,615); Pioneer (Superior) district 21,500 (18,721); Verde district, 20,500 (14,544). Output from the Warren (Bisbee) district dropped from 19,204 to 10,000 tons, that from the Mineral Creek (Ray) district was about the same as in 1948 when it totaled 18,753, but that from the Eureka (Bagdad) district increased from 7,247 to 7,775. The output of copper ore dropped from 39,072,204 tons in 1948 to about 37,100,000 tons in 1949. Mining operations at 6 open pits —— Ajo, Bagdad, Inspiration, Miami (Castle Dome), Morenci and Ray —— produced approximately 29,000,000 tons of copper ore in 1949 compared with 5 open pits which produced 29,638,873 tons in 1948. Open-pit mining at the Ray property of the Kennecott Copper Corp. began in October. All six copper smelters in Arizona —— International Smelting & Refining Co. at Miami, Magma Copper Co. at Superior, Phelps Dodge Corp. at Clarkdale, Douglas and Morenci, and American Smelting & Refining Co. at Hayden —— operated continuously throughout the year, but at a lower rate than in 1948. Construction of the new copper smelter at Ajo progressed during the year and is expected to be in operation before the end of 1950.

California. - Production of 660 tons in 1949 was 37 percent above 1948 but below any other year since 1934 and considerably below any year 1939-47. Except for minor tonnages of copper ore treated in 1949, ores mined principally for metals other than copper accounted for California's total.

Colorado. - Copper output increased slightly in 1949 against the trend for the United States. The Treasury Tunnel-Black Bear group was the only substantial producer of copper in the State as it was in 1948.

Idaho. - Copper production dropped 15 percent in 1949 conforming to the pattern for the United States. Most of the copper was recovered as a byproduct in the treatment of silver ore and zinc-lead ore and old tailings from mines in the Coeur d'Alene region. The principal producers in 1949 were the Sunshine, Bunker Hill & Sullivan, Polaris, Silver Dollar, and Triumph properties, all in the Coeur d'Alene region except the Triumph.

Michigan. - Copper production in Michigan dropped 32 percent in 1949 the greatest percentage decline among important producers. The reduction was caused by the closing of the Isle Royale mine in December 1948, and the cessation of underground mining operations and part of the reclamation work by the Calumet & Hecla Mining Co. from May 1 to September 6. Production in 1949 came also from the properties of the Copper Range Co. and Quincy Mining Co.

Montana. - Copper output fell 8 percent in 1949 and was at the lowest annual rate since 1934. The State ranked fourth as a copper producer in 1949 as in 1948 and 1947, when it fell from its accustomed third place. The reversal in 1949 of the slight uptrend in 1948 was due to the curtailment of operations in June at the Butte Hill mine and dumps of the Anaconda Copper Mining Co. This property contributed 99 percent of the total copper output for Montana. Following the collapse in the copper price in mid-1949 the Belmont mine was closed and filling and shaft sinking in progress on the Greater Butte Project of the Anaconda Copper Mining Co. were suspended. Production at the Belmont mine and sinking of the Kelly shaft were resumed in mid-November.

Of the 2,427,000 tons of ore estimated to have been produced in 1949, about 51 percent was copper ore. Of the 3,020,307 tons produced in 1948, 1,511,069 tons, or 50 percent were copper ore.

Nevada. - Nevada ranked fifth in copper production in 1949 as it has since 1942 when it stood fourth. In 1949 the output fell 17 percent continuing the decline uninterrupted, except for a minor reverse in 1947, since the all-time record of 83,663 tons was established in 1942. Virtually all of the 1949 copper was produced in the Robinson district, White Pine County, by the Kennecott Copper Corp. (Nevada Mines Division) and the Consolidated Coppermines Corp. from the Ruth pit and extension. Underground mining by Consolidated Coppermines Corp. ceased in June 1949.

New Mexico. - Only Arizona and Utah outranked New Mexico in copper production in 1949, as in 1948 and 1947; Montana stood third in 1946. Output in New Mexico dropped 25 percent or considerably more than the average for the United States. By far the chief producer was again the Chino open-pit mine of the Kennecott Copper Corp. Chino Mines Division at Santa Rita in the Central district, Grant County. The mine and 22,500-ton concentrator at Hurley were operated continuously but at a lower rate than in 1948. In Hidalgo County the Banner Mining Co. operated continuously its Bonney-Miser's Chest group, principal producer of copper in the Lordsburg district since 1936. C. H. & S. A. McIntosh continued to work the Atwood copper mine, shipping ore direct to smelters. The leaching operations of the Phelps Dodge Corp. at its Burro Mountain mine at Tyrone, Grant County, were suspended in June. Some silicious copper ore was shipped from the Torpedo mines in the Organ district, Dora Ana County, and the San Pedro Copper mine in the San Pedro or New Placers district, Santa Fe County.

Utah. - Utah easily held second place in copper output in 1949, having produced 54 percent as much as Arizona and 343 percent as much as New Mexico, which ranked first and third, respectively. The West Mountain (Bingham) district produced more copper than any other in the United States surpassing second place Morenci (Ariz.) by a substantial margin. Output for the State fell 15 percent. Following a work stoppage at the Utah Copper mine of the Kennecott Copper Corp. at

Bingham, beginning October 24, 1948, operations were resumed on February 7, 1949. The loss from the shut-down during the 1949 period is estimated to have been more than 30,000 tons of recoverable copper. On June 1, the mine changed its work-week from 48 to 40 hours, thereby bringing about a further reduction in output. The two factors are responsible for the decrease in production in 1949. Among other Utah properties, only the United States and Lark unit at Bingham produced more than 500 tons of copper in 1949. Of the 21,241,000 tons of material treated during the year about 20,200,000 tons were copper ore. These figures compare with 25,741,911 tons and 24,458,362 tons, respectively in 1948.

Washington. - Copper output fell 10 percent in 1949. Production at the Holden mine of the Howe Sound Co. in Chelan County, likewise dropped 10 percent. No other properties in the State contributed important quantities of the metal during the year.

Mine production of recoverable copper in the United States in 1949, by months 1/, in short tons

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
States east of the Mississippi:													
Michigan.......	2,054	2,078	2,076	1,817	522	536	523	604	2,055	2,245	2,230	2,140	18,880
Other.........	1,264	1,098	1,212	1,039	1,170	1,068	1,081	1,191	1,182	850	1,100	1,175	13,430
	3,318	3,176	3,288	2,856	1,692	1,604	1,604	1,795	3,237	3,095	3,330	3,315	32,310
Missouri..........	208	250	300	262	296	335	287	420	387	315	348	346	3,754
Western States:													
Arizona.........	33,020	32,080	37,365	34,970	32,420	27,960	25,470	22,455	26,045	27,555	28,560	28,600	356,500
California.....	80	70	110	70	80	60	30	30	30	30	30	40	660
Colorado.......	160	146	207	144	201	183	209	263	219	209	202	207	2,350
Idaho..........	100	110	145	150	185	140	130	135	60	40	60	120	1,375
Montana........	4,465	5,330	5,580	5,050	5,020	4,105	3,840	3,915	3,680	4,200	4,315	4,350	53,850
Nevada.........	3,260	2,350	4,270	4,120	3,480	2,730	1,530	3,720	3,070	2,900	2,940	3,020	37,390
New Mexico.....	4,978	4,958	5,458	4,285	5,181	5,641	5,748	4,240	3,652	3,524	4,187	4,148	56,000
Oregon.........	—	—	—	—	—	1	2	3	8	4	3	3	24
Texas..........	4	6	3	6	3	—	—	—	—	—	2	1	25
Utah...........	120	7,640	20,700	20,170	18,350	18,080	17,520	18,425	17,240	17,885	17,900	18,040	192,070
Washington.....	465	460	480	485	435	475	365	450	385	350	365	375	5,090
	46,652	53,150	74,318	69,450	65,355	59,375	54,844	53,636	54,389	56,697	58,564	58,904	705,334
Alaska 2/........	—	—	—	—	—	—	—	—	—	1	1	—	2
Total United States...	50,178	56,576	77,906	72,568	67,343	61,314	56,735	55,851	58,013	60,108	62,243	62,565	741,400

1/ Revised figures.
2/ Alaska monthly totals based on smelter receipts.

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MINERAL MARKET REPORT MMS NO. 1828
(Replaces November and December
monthly reports 67 and 68)

MINE PRODUCTION OF GOLD IN THE UNITED STATES IN 1949
PRELIMINARY ANNUAL FIGURES

Mine output of recoverable gold declined 3 percent in 1949 as compared with 1948, marking a relatively good performance in view of factors unfavorable to gold production that were present during the year, according to the Bureau of Mines, United States Department of the Interior. In 1949 the chief deterrent to greater gold production was continued rising production costs combined with an inflexible gold price. Labor strikes at some nonferrous mines and smelters, where gold is produced as a byproduct, and the recession in general industrial activity leading to cut-backs in prices and subsequently in production of copper, lead and zinc, with which gold usually occurs, were added adverse factors. Copper production fell 11 percent and zinc declined 7 percent, but lead actually gained 3 percent because from a lead viewpoint the labor stoppages were more serious in 1948 than in 1949.

Output in South Dakota, which ranked first among gold-producing areas in 1949, gained 21 percent and in fifth- and sixth- ranking Nevada and Arizona rose 18 and 1 percent. In California, Utah, Alaska, and Colorado, ranking second, third, fourth and seventh, respectively, on the other hand, output fell 3, 17, 11, and 37 percent, respectively. In South Dakota, California, Alaska, and Colorado, production is largely from gold and gold-silver ores and from placer operations. In Utah and Arizona the recovery of gold is largely incidental to production of another metal or metals, and in Nevada gold and gold-silver ores as well as nonferrous ores contribute largely to the State's production.

This report which summarizes mine output for 1949 is part of the regular monthly gold mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1950. The following table and State reviews for 1949, except for States east of the Mississippi, were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable gold content of ores and concentrates.

Alaska. - Gold continued in 1949 to be the mineral with by far the greatest total value in Alaska. Production dropped for the second successive year and was the smallest since 1945, during which latter year the gold mining restrictions of War Production Board were rescinded. Although in 1949 the supply of labor was better than at any time since the war, the narrowing margin between high operating costs and the inflexible $35 per fine ounce official price for gold was not conducive to operation of any but the more efficient enterprises. More than 95 percent

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Prepared by Charles White Merrill, Chief, Metal Economics Branch, Minerals Division, of the total Alaska gold output in 1949 came from placer mines, the greater part coming from the operation of bucket-line dredges. The principal producer was the United States Smelting, Refining and Mining Co., which operated five dredges in the Fairbanks district, and two dredges in the Nome district at various times during the year. Although output of gold from active lode mines remained relatively small the total was increased substantially as the result of production from the Independence mine, Willow Creek district, which resumed operation late in the season after being inactive since 1946. A substantial quantity of gold was recovered by reworking old tailings from the Alaska Juneau, Thane, and Treadwell mills on Gastineau Channel. The Alaska Juneau mine continued inactive.

Arizona. - Production of gold rose slightly as compared with 1948 and was the highest since 1944. Nearly 74 percent of the total for 1949 was recovered from copper ore mined at Bisbee, Ajo, Jerome, Superior, Morenci, and Miami. The remainder of the gold came largely from zinc-lead ore from a mine in the Big Bug district. The largest producers in the State were the New Cornelia, United Verde, Iron King, Magma, Copper Queen, and Morenci mines; these six properties produced 90 percent of the State total.

California. - Ranking second in output of gold in the United States in 1949, compared with first in 1948, California's production dropped 3 percent contrasted with a 21-percent rise in first-place South Dakota. According to preliminary data 61 percent of the 1949 output was from placer mines and 39 percent from lode mines. Following the pattern of recent years bucket-line dredges produced the major part of the 1949 placer gold; leading producers were Yuba Consolidated Gold Fields which operated dredges in Yuba, Butte and Siskiyou Counties and the fleet of dredges operated by Natomas Co. in the Folsom district, Sacramento County. Dragline dredging was less active in 1949 than formerly, and hydraulic and drift mines were worked sporadically only during the year. New placer developments during 1949 included Fairway Placers, a bucket-line dredge near Minersville, Trinity County and Crescent Pacific Mining Co. operation on the middle fork of the Yuba River, Nevada County. Bucket-line dredges respectively of Tuolumne Gold Dredging Co. in Stanislaus County, Merced Dredging Co, in Merced County, Lancha Plana Gold Dredging Co. in Butte and Sacramento Counties and Thurman & Wright in Sacramento County closed down during 1949. Leading lode mines in 1949 were Idaho Maryland Mines Corp. and Empire Star Mines Co., Ltd. properties, largely lessee operated, in the Grass Valley-Nevada City district, Nevada County. Other producers that contributed substantially to the State total lode gold were: - Central Eureka Mining Co. Old Eureka mine, Mother Lode district, Amador County; the Original Sixteen to One Mine, Inc. Original Sixteen to One mine, Alleghany district, Sierra County; Mount Gaines Mining Co. Mount Gaines mine, Hunter Valley district, Mariposa County, and Burton Bros. which operated the Cactus and Tropico mines and a custom mill in the Mojave district, Kern County.

Colorado. - Colorado ranked seventh in production of gold a drop from fifth place in 1948. Output declined 37 percent compared with a 3 percent decrease for the United States. The quantity for Colorado in 1949 was the smallest since 1873; in value it was the lowest since 1882. Nearly all mining operations in the Cripple Creek district, which in recent years produced around 35 percent of the State total gold, were suspended in February 1949, when the shut-down of the Golden Cycle mill at Colorado Springs left the district temporarily without a market for the ore. A new local market will be provided, probably in the latter part of 1950, with completion of the Carlton custom mill being built between Cripple Creek and Victor. There were material decreases in production in other important gold districts. The five leading gold producers in 1949 were: Telluride Mines (Inc.) Smuggler Union group at Telluride; Idarado Mining Co. Treasury Tunnel-Black Bear group, San Miguel County; Resurrection Mining Co. group at Leadville; Shenandoah-Dives group near Silverton; and the South Platte Dredging Co. connected-bucket dredge near Fairplay.

Idaho. - Production rose 35 percent in 1949, contrary to the performance of silver, copper, lead, and zinc, all of which dropped. The increase in gold was entirely from lode mines as the output from placer properties decreased from 20,776 ounces to 16,300 ounces. Lode mines contributed 62,800 ounces compared with 37,678 ounces in 1948. About 68 percent of the gold produced in Idaho in 1949 was recovered from gold-silver-antimony ore from the Yellow Pine mine at Stibnite and 19 percent from bucket-line and dragline dredging in the Boise Basin, Elk City, and Yankee Fork districts. Bucket-line dredges were operated at Idaho City and Centerville, Boise County; and at Elk City, Idaho County. Dragline dredges were operated on Jordan Creek, Custer County; and on the South Fork of Clearwater River and on American River, Idaho County. Large producers of placer gold, that suspended operations in 1949, were Baumhoff-Marshall, Inc. (bucket-line dredge at Centerville) and H. & H. Mines, Inc. (bucket-line dredge at Elk City). In 1949 the Bradley Mining Co. (Yellow Pine mine at Stibnite) nearly doubled its 1948 gold output and was again by far the largest producer of gold in Idaho; it was followed by the Idaho-Canadian Dredging Co. at Idaho City, Warren Dredging Co. at Elk City, Jordan Placers dredge near Sunbeam, Talache Mines, Inc., (gold ore) at Atlanta, and Triumph Mining Co. (zinc-lead ore) at Triumph.

Montana. - Gold output declined at most of Montana's larger placers and gold-producing lodes in 1949; the total for the State was 36 percent less than in 1948. Decreases were pronounced at the Butte operations of the Anaconda Copper Mining Co., H. & H. Mines dredging operation in Granite County, Drumlummon mine at Marysville, Porter Bros. dredging operation near Helena, and the Ruby Gulch mine in Phillips County; outputs from the Otis Williams dredge in Lewis and Clark County and the Estelle-New Year's Gift group in Park County appear to have held near the 1948 level.

The seven leading gold producers in 1949 were the Butte Hill mine and dumps (copper ore and zinc-lead ore), Estelle-New Year's Gift group (copper ore), Drumlummon mine (gold ore), Porter Bros. placer, Ruby Gulch mine (gold ore), H. & H. Mines placer and Otis Williams placer. These properties supplied 67 percent of the State gold.

Nevada. - Output of gold rose 18 percent in 1949, against the general trend for the United States. According to preliminary figures 96 percent of the total was produced at lode mines and 4 percent at placers. Gold from base-metal ores comprised 38 percent of the output and that from precious metal ores 58 percent. Leading producers of gold in order of output were: The Kennecott Copper Corp. (Nevada Mines Division) Robinson district, White Pine County; Getchell Mines, Inc., Getchell mine, Potosi district, Humboldt County; London Extension Mining Co., Gold acres mine, Bullion district, Lander County; Consolidated Coppermines Corp., Robinson district, White Pine County; and Consolidated Chollar Gould and Savage Mining Co., Overman mine, Comstock district, Storey County. The Natomas Co. dredge, and the Southwest Dredging Co. dragline operation in the Rochester district, Pershing County, were the principal producers of placer gold in 1949.

New establishments developed and brought into production included the mines and mill of Goldfield Deep Mines Co. of Nevada, Goldfield district, Esmeralda

County and the Natomas Co. bucket-line dredge in the Battle Mountain district, Lander County. Nevada Porphyry Gold Mines, Inc. placer at Round Mountain, Nye County, an innovation in large-scale conveyor handling of gravel was readied for production late in the year.

New Mexico. - Most of the relatively small output of gold in New Mexico was recovered from copper ore produced by the Atwood and Bonney-Miser's Chest mines in the Lordsburg district, Hidalgo County, and zinc-lead ore mined in the Central district, Grant County. Some gold ore was shipped from the Old Abe mine in Lincoln County, and the Malone-Darhasana in Grant County, and a few ounces of placer gold were produced in Santa Fe County.

Oregon. - Production rose 9 percent in 1949. Placer mining contributed most of Oregon's gold owing largely to production from the bucket-line dredges of Baker Dredging Co., Sumpter district, Baker County, and Porter & Co., Granite district, Grant County. The dragline dredge of Calhoun & Howell of Oregon Ltd. and Buffalo Gold Dredging Co. bucket-line dredge, both in the John Day region, Grant County and Brockton-Nevada Mining Syndicate's dragline equipment in the Sumpter district, Baker County, made important contributions to the State total gold.

South Dakota. - Of the four largest gold-producing areas in the United States only South Dakota, ranking first, had greater output in 1949 than in 1948, the gain amounting to 21 percent. Production in 1949 was at the highest level since 1942 when limitations were placed on gold mining in the United States by War Production Board Order L-208. The Homestake mine at Lead, Lawrence County, operated continuously in 1949, production in the latter half of the year showing a large increase over the first half. The limited number of men available for underground work has prevented operation at normal capacity since the limiting order was rescinded. The Bald Mountain mine at Trojan, an important producer, also operated at a higher rate than in 1948. Some gold was produced at the Frerichs mine near Deadwood.

States East of the Mississippi. - Recovery of gold declined 19 percent, or from 2,479 fine ounces in 1948 to 2,008 in 1949. The loss in 1949 was due chiefly to the effect on the Cornwall mine (Pennsylvania), where gold is produced as a byproduct, of the month-long steel strike.

Utah. - Output of gold fell 17 percent in 1949 and was the smallest since 1946. Utah ranked third among gold-producing areas in 1949 as in 1948; it stood second in 1947 and first in 1943-45 when gold production from straight gold ore and from gravels was virtually stopped by War Production Board Order L-208. Utah's gold is recovered largely as a byproduct of metals used directly in the waging of war.

The majority of the larger gold-producing properties in Utah had smaller outputs in 1949; exceptions were the Park Utah Consolidated mine and the Daly No. 1 dump, both in the Park City region, and the Butterfield group in the West Mountain (Bingham) district. As usual, the Utah Copper mine of the Kennecott Copper Corp. led State gold producers by a wide margin, followed by the United States & Lark unit, New Park property, Park Utah Consolidated mine, Chief Consolidated property, Butterfield group, Daly No. 1 dump, Calumet mine, and Eureka Lilly mine. These nine producers, each with an output of more than 1,000 ounces of gold, supplied 98 percent of the State total. Of the total gold for Utah, copper ore furnished 85 percent, zinc-lead ore 12, other base metal ores 1, and gold and silver ores 2 percent.

Washington. - Output of gold declined 4 percent in 1949. The leading producers were the Holden mine, Knob Hill mine, and Aurum group, which together produced all but a very small part of the State total.

Mine production of recoverable gold in the United States in 1949, by months 1/, in fine ounces

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
States east of the Mississippi...	210	183	223	192	214	184	166	183	156	26	106	165	2,008
Western States:													
Arizona......	10,360	9,170	11,790	10,870	10,500	8,855	7,365	6,930	8,180	9,020	8,760	8,800	110,600
California...	30,170	32,090	34,660	35,620	32,810	35,210	33,850	35,180	34,250	36,200	34,920	35,350	410,310
Colorado.....	9,725	7,298	8,131	6,198	7,044	8,000	7,284	9,073	10,673	7,818	8,448	8,308	98,000
Idaho........	2,365	2,660	3,960	5,340	7,190	8,480	8,570	7,260	9,015	8,800	8,060	7,400	79,100
Montana......	3,000	3,055	4,025	4,180	4,550	4,100	4,230	3,850	3,870	4,000	3,940	3,900	46,700
Nevada.......	6,830	7,510	10,900	12,930	10,350	10,460	8,850	11,870	13,370	12,470	12,919	13,140	131,599
New Mexico...	267	204	356	324	234	394	268	194	199	206	231	223	3,100
Oregon.......	300	250	860	1,550	1,410	2,010	1,340	2,200	1,510	1,750	1,330	1,380	15,890
South Dakota.	31,591	32,032	38,277	39,907	35,737	34,529	41,012	43,559	38,551	40,514	40,641	40,650	457,000
Texas........	3	5	2	5	2	—	—	—	10	6	3	4	40
Utah.........	3,075	15,190	32,865	33,005	30,205	27,980	25,855	25,765	28,980	26,880	27,400	28,550	305,750
Washington...	5,970	5,930	6,765	7,070	6,235	6,240	4,310	5,280	4,920	5,000	4,910	4,970	67,600
Wyoming......	—	—	2	98	56	—	59	120	10	35	10	10	400
	103,656	115,394	152,593	157,097	146,323	146,258	142,993	151,281	153,538	152,699	151,572	152,685	1,726,089
Alaska 2/......	—	19	29	644	10,142	21,518	23,875	37,143	33,852	58,181	20,500	15,000	220,903
Total United States.	103,866	115,596	152,845	157,933	156,679	167,960	167,034	188,607	187,546	210,906	172,178	167,850	1,949,000

1/ Revised figures.
2/ Alaska monthly totals based on mint and smelter receipts.

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MINERAL MARKET REPORT NO. 1829
(Replaces November and December
monthly reports 67 and 68)

MINE PRODUCTION OF SILVER IN THE UNITED STATES IN 1949
PRELIMINARY ANNUAL FIGURES

Mine output of recoverable silver in the United States dropped 11 percent in 1949 as compared with 1948, owing largely to factors primarily affecting other metals with which silver is recovered as a byproduct, according to the Bureau of Mines, United States Department of the Interior. A labor strike at the Utah Copper mine, an outstanding producer of byproduct silver, in the early weeks of 1949 and one late in the year at the Bunker Hill lead smelter at Bradley, Ida., reduced silver production. Sharply curtailed demand and prices for copper, lead, and zinc, in mid-year resulted in reduced work weeks at many mines and some mine closures, and were outstanding reasons for the smaller silver output, despite a partial recovery in prices and year-end expansion in weekly working hours at many properties. Increased costs of mining gold for a number of years combined with an unchanged price had the effect of further restricting byproduct silver production.

In Idaho, the leading silver-producing State, output (15 percent smaller in 1949 than in 1948) comes chiefly from silver ores, the only place where such is the case. In Utah, holding second place, output (17 percent lower than in 1948) is largely as a byproduct in the production of zinc-lead and copper ores. In Montana, ranking third and showing a 14-percent drop, output is likewise largely from zinc-lead and copper ores. Arizona, ranking fourth, produced 5 percent more silver in 1949 than in 1948; recovery of the metal is largely from copper and zinc-lead ores. Fifth ranking Colorado had a 5-percent drop in 1949; production came largely from a variety of ores including gold, gold-silver, silver, zinc-lead and zinc-lead-copper ores. Nevada held sixth place in 1949, output gaining 3 percent over 1948. Production in 1948 was about half from dry ores and half from base metal ores.

This report which summarizes mine output for 1949 is part of the regular monthly silver mine production series. As preliminary figures for November and estimates for December are included, the report serves for both these months and the next issue will be for January 1950. The following table and State reviews for 1949, except for States east of the Mississippi, were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all the reports in the series. The figures are given in terms of recoverable silver content of ores and concentrates.

Alaska. - Silver production in Alaska dropped 46 percent in 1949. The output was largely the byproduct of gold mining (principally bucket-line dredge operations in the Fairbanks district) and lead ore (produced from the Riverside mine, Hyder district, Southeastern Alaska region).

Prepared by Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Arizona. - Arizona ranked fourth among silver-producing States in 1949; production rose 5 percent to 5,070,000 fine ounces. Output from copper ore decreased from 2,814,833 to 2,500,000 ounces, but that from zinc-lead ore increased from 1,544,153 to about 1,870,000 ounces, and that from zinc-copper ore from 65,811 to about 200,000 ounces. Approximately 76 percent of the State total in 1949 came from the Copper Queen, Morenci, New Cornelia and United Verde mines of the Phelps Dodge Corp. and the Iron King and Magma mines. Output of silver from the Warren district, the principal source in Arizona, fell from 1,432,172 ounces in 1948 to about 1,200,000 ounces in 1949 because of suspension in June of copper operations at the Copper Queen mine at Bisbee.

California. - Production of silver rose 8 percent in 1949 against the trend in most areas. Reflecting the increase in base metal production, the yield of silver from argentiferous lead, zinc-lead and zinc-copper ores was about 85 percent of the 1949 California silver output. Anaconda Copper Mining Co. Darwin group of mines, Coso district and Shoshone group, Resting Springs district, both in Inyo County, as in 1948, contributed a large percentage of the State silver.

Colorado. - Silver production decreased 5 percent in 1949 and amounted to about half the annual average of the 10-year period 1932-41. The State maintained its accustomed place as fifth largest silver-producing area in the United States. Chief producers in 1949 were: Shenandoah-Dives group near Silverton; Idarado Mining Co. Treasury Tunnel-Black Bear group, San Miguel County; Emperius Mining Co. group at Creede; American Smelting & Refining Co. Kokomo unit; and Eagle mine at Gilman.

Idaho. - As usual Idaho ranked first in silver production in the United States by a substantial margin; output, however, fell 15 percent. The lower silver production is explained by the closing in August of the strike-bound Bunker Hill lead smelter at Bradley; operations were resumed November 19. Most of the loss in silver occurred in the Coeur d'Alene region, Shoshone County, where the principal producers of silver in the State are located. About 49 percent of the State total was recovered from silver ore, 38 percent from zinc-lead ore and old tailings, and the remainder largely from gold-silver-antimony ore and lead ore. The Sunshine mine remained the largest producer of silver in the State, although its output declined 21 percent from 1948. It was followed in 1949 by the Bunker Hill & Sullivan, Polaris, Silver Dollar, Page, Day Mines, Inc., Triumph, Lucky Friday, Star, Morning, Sidney, Silver Summit, Silver Syndicate, and Bunker Hill & Sullivan tailing properties; all except the Triumph mine are in the Coeur d'Alene region. The Coeur d'Alene region produced 92 percent of the State total silver in 1949; the remainder came largely from the Warm Springs, Yellow Pine and Bayhorse districts.

Missouri. - Silver was recovered as a byproduct by smelters treating lead concentrates from the Southeastern Missouri region, and a little was produced from lead-copper ore mined in the same region. Production in 1949 was 6 percent above 1948.

Montana. - Production of silver dropped 14 percent in 1949 and was the smallest since 1934 except for 1946 and 1945. Yield of silver at the Butte Hill mine and dumps of the Anaconda Copper Mining Co. was 11 percent lower than in 1948. This property produced 84 percent of the State silver in 1949. The Emma mine at Butte, in second place, likewise experienced a decline, but the Mike Horse mine at Flesher, ranking third, produced 18 percent more silver than in 1948. These three properties contributed 90 percent of the State silver in 1949.

Nevada. - Nevada ranked sixth among silver-producing areas in 1949; output rose 3 percent over 1948. As in 1948 a large percentage of Nevada's silver was recovered from base metal ores and concentrates. The Comined Metals Reduction Co., Pioche district, Lincoln County, treated zinc-lead ore and contributed more than one-fourth of the State silver. Second place was held by Copper Canyon Mining Co., Copper Canyon mine, Battle Mountain district, Lander County, a development of 1948, (zinc-lead concentrate). Summit King Mines, Ltd., Summit King group, Sand Springs district, Churchill County (gold-silver ore) in third place was followed by Consolidated Chollar Gould and Savage Mining Co. Overman mine (gold-silver ore). Central Comstock Mines Corp. a new enterprise cyaniding tailings in the Comstock district, Storey County, contributed substantially to the State's silver in 1949.

New Mexico. - The bulk of the State output of silver was recovered from base-metal ores, although small tonnages of silver ore were shipped from a few scattered mines. Larger producers included the Atwood and Bonney-Miser's Chest copper mines in Hidalgo County, the Ground Hog, Bayard, Hanover (Empire Zinc), and Kearney zinc-lead mines in Grant County, and the Waldo, Lynchburg, and Nitt zinc-lead mines in Socorro County.

Oregon. - Oregon's silver output in 1949 continued at the low level of 1948. Output other than that recovered with gold from placer operations was chiefly from the Buffalo mine gold ore and concentrate and from Champion mine gold ore and copper concentrate treated at smelters.

South Dakota. - The State output of silver is incidental to the production of gold. Silver production rose 19 percent in 1949.

States East of the Mississippi. - Silver was recovered chiefly as a byproduct in States east of the Mississippi. Output rose 8 percent in 1949. The principal producers in order of output were the Tennessee Copper Co., in Tennessee, the Vermont Copper Co., in Vermont, the St. Joseph Lead Co. in New York, and the Bethlehem Steel Co., in Pennsylvania.

Utah. - Utah was surpassed in production of silver by Idaho only in 1949 as has been the case since 1942, when Montana ranked second. Output dropped 17 percent owing in part to the work stoppage at the Utah Copper mine in the early months of the year. With the exception of the Butterfield group and the Daly No. 1 dump, all of the larger producers of silver in Utah had smaller outputs in 1949 than in 1948. Decreases were especially large at the Utah Copper, Park Utah Consolidated, and Silver King Coalition mines. Properties that produced 100,000 ounces or more of silver were as follows: Utah Copper mine, United States & Lark unit, Chief Consolidated property, New Park property, Butterfield Group, Daly No. 1 dump, Park Utah Consolidated property, Silver King mine, and Calumet mine. These properties furnished 90 percent of the State total. Zinc-lead ore, zinc ore, and lead ore together supplied 56 percent of the State silver, copper ore 32, and gold and silver ores 12 percent.

Washington. - Silver production dropped 10 percent in 1949. Output increased appreciably at the Bonanza mine in Stevens County but declined slightly at the Holden mine, Knob Hill mine, and Aurum group. These four properties produced 95 percent of the State silver.

Mine production of recoverable silver in the United States in 1949, by months 1/, in fine ounces

Region and State	January	February	March	April	May	June	July	August	September	October	November	December	Total
States east of the Mississippi...	9,000	9,665	9,336	9,747	9,667	9,568	8,909	8,962	8,744	8,453	8,549	8,740	109,340
Missouri.......	7,730	8,000	11,030	9,000	9,850	10,960	9,915	11,800	10,850	10,400	10,700	10,545	120,780
Western States:													
Arizona......	431,135	418,650	522,950	495,620	460,300	416,650	347,620	367,900	371,800	410,375	410,000	417,000	5,070,000
California...	62,790	73,880	73,350	82,900	79,270	66,550	30,430	30,410	55,600	80,440	74,270	76,410	786,300
Colorado.....	200,373	174,634	221,137	213,376	221,681	224,486	246,485	314,117	290,906	247,191	247,452	248,162	2,850,000
Idaho........	840,600	937,300	1,047,200	1,120,600	1,237,000	991,000	886,000	995,500	321,000	200,000	375,800	778,000	9,730,000
Montana......	595,200	556,700	632,900	607,370	645,965	444,475	410,850	460,180	353,710	417,000	435,000	433,650	5,993,000
Nevada.......	98,170	129,070	177,900	181,470	174,830	163,830	134,260	151,090	160,780	154,800	161,750	162,870	1,850,820
New Mexico...	33,619	33,766	48,516	38,723	39,564	41,360	27,251	24,942	20,061	17,808	21,454	20,936	368,000
Oregon.......	270	40	180	300	250	720	2,180	1,640	1,880	2,120	1,690	2,430	13,700
South Dakota.	8,485	7,486	9,161	9,525	8,905	8,967	10,213	10,723	9,144	10,174	10,115	10,102	113,000
Texas........	191	393	244	378	198	—	—	—	548	351	240	257	2,800
Utah.........	271,595	367,320	689,880	692,215	673,500	651,210	543,330	553,500	585,450	545,000	567,000	569,000	6,709,000
Washington...	30,600	34,000	34,500	38,135	36,775	32,150	23,200	24,900	20,800	21,165	20,200	20,575	337,000
Wyoming......	—	—	—	7	3	—	4	9	1	2	2	2	30
	2,573,028	2,733,239	3,457,918	3,480,619	3,578,241	3,041,398	2,661,823	2,934,911	2,191,680	2,106,426	2,324,973	2,739,394	33,823,650
Alaska 2/......	—	7	4	297	1,472	3,244	3,420	5,607	5,772	9,407	4,000	3,000	36,230
Total United States.	2,589,758	2,750,911	3,478,288	3,499,663	3,599,230	3,065,170	2,684,067	2,961,280	2,217,046	2,134,686	2,348,222	2,761,679	34,090,000

1/ Revised figures.
2/ Alaska monthly totals based on mint and smelter receipts.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For release JANUARY 30, 1950.

MINERAL MARKET REPORT
MMS NO. 1830

METAL MINING IN THE STATES EAST OF THE MISSISSIPPI RIVER, 1949 - PRELIMINARY ANNUAL FIGURES

Lower prices for the base metals and work stoppages in the steel and zinc smelting and fabricating industries, which directly affected the operation of some mines, resulted in a decreased output of gold, copper, lead, and zinc in 1949 in the States East of the Mississippi River, according to the Bureau of Mines, United States Department of the Interior. Output from mines producing silver were not greatly affected and the quantity of metal recovered increased over that of 1948. Gold mining was at a virtual standstill, and the gold and silver output was chiefly a byproduct of base metal mining. Prices for gold and domestically mined silver remained the same throughout the year. Copper quotations, Connecticut Valley, opened in 1949 at 23.5 cents a pound, dropped to a low of 16.0 cents in mid-June and closed at 18.5 cents. Lead quotations, New York, opened at 21.5 cents a pound and closed at 12.0 cents. Zinc quotations, St. Louis, opened at 17.5 cents and closed at 9.75 cents.

Preliminary figures for 1949 are based on 11 months' actual production for the larger producers and 10 months' receipts at smelters for smaller and intermittent producers. Output (in terms of recoverable metals) was 2,008 fine ounces of gold, 109,340 fine ounces of silver, 32,310 short tons of copper, 8,719 short tons of lead, and 156,334 short tons of zinc. In 1948 the output was 2,479 ounces of gold, 101,171 ounces of silver, 42,025 tons of copper, 10,706 tons of lead and 177,787 tons of zinc, indicating decreases of 19 percent for gold, 23 percent for copper, 19 percent for lead and 12 percent for zinc, and an increase of 8 percent for silver.

The prices used for calculating the value of the production in 1949 are $35.00 per fine ounce of gold and $0.9050505 per fine ounce of silver, and the average weighted yearly prices of $0.197 per pound of copper, $0.159 per pound of lead, and $0.128 per pound of zinc. In 1948 the price used for gold was $35.00, silver $0.9050505, and the average weighted yearly price for copper was $0.217, lead $0.179, and zinc $0.133. The value of zinc output of New Jersey, the one exception to the foregoing statements, is the value of zinc recoverable as metal and oxide after transportation, smelting and manufacturing charges are added. The value of the zinc production from New Jersey in 1949 is not yet available; in 1948 it was $20,709,849.

GOLD

Gold recovered from mines East of the Mississippi River was 19 percent less in 1949 than in 1948. Output in 1949 was estimated at 2,008 fine ounces compared with 2,479 ounces in 1948. This decrease was chiefly due to loss of output at the Cornwall mine of the Bethlehem Steel Co. during the steel strike from October 1 to

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Prepared by Samuel A. Gustavson, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

October 31. Only 18 fine ounces of gold was reported recovered from gold ores in 1949, 13 ounces from North Carolina and 5 ounces from Georgia. The remainder was recovered as a byproduct from treatment of copper concentrates produced at the Cornwall mine of the Bethlehem Steel Co. in Pennsylvania, the Tennessee Copper mines in Tennessee, and the Elizabeth mine of the Vermont Copper Co. in Vermont.

SILVER

Silver recovered chiefly as a byproduct from mines in States East of the Mississippi River, was 8 percent greater in 1949 than in 1948. Production in 1949 was estimated at 109,340 fine ounces. The principal producers in order of output were the Tennessee Copper Co., in Tennessee, Vermont Copper Co., in Vermont, St. Joseph Lead Co., in New York, and Bethlehem Steel Co., in Pennsylvania. Other silver is recovered as a byproduct from lead concentrates produced by several mines in the Southern Illinois and Kentucky fluorspar mining district. Steady operation and increased output from mines in Tennessee, Vermont and New York accounted for the increase in silver production during 1949. Decreased production of silver was reported by mines in Pennsylvania and Southern Illinois. Of the total silver recovered in 1949, 26,960 ounces were from lead and zinc-lead ores and 82,380 ounces from copper, copper-zinc and magnetite-pyrite-chalcopyrite ores.

COPPER

Copper production in 1949 in States East of the Mississippi River was estimated at 32,310 tons, 23 percent less than the 1948 output of 42,025 tons. This decrease is the result of the closing of the Isle Royale Copper Co's. mines in December 1948 and the cessation of underground mining operations and part of the reclamation work by the Calumet & Hecla Mining Co. from May 1 to September 6, in Michigan; and the loss of output during the steel strike (October 1 - 31) at the Bethlehem Steel Co. mine in Pennsylvania. The Tennessee Copper Co., Copper Range Co., and Quincy Mining Co. produced at about the same rate as in 1948 while the Vermont Copper Co. increased its output by about 41 percent.

The principal producers in 1949 were the Calumet & Hecla Consolidated Copper Co., Copper Range Co., and Quincy Mining Co. in Michigan; Bethlehem Steel Co. in Pennsylvania; Tennessee Copper Co. in Tennessee; and the Vermont Copper Co. in Vermont.

LEAD

Lead was produced in 6 of the States East of the Mississippi River during 1949 compared with 5 in 1948. However, the total output decreased 19 percent to 8,719 tons from 10,706 tons. Reduced output from the Austinville mine of the New Jersey Zinc Co. in Virginia accounted for most of this decrease. Kentucky, Illinois, and Wisconsin mines recorded slight decreases; New York mines recorded a slight increase, and in addition a small output was reported from mines near Embreeville, Tenn., which State reported no production of lead in 1948. The principal producers were the New Jersey Zinc Co. in Virginia, Ozark-Mahoning Co. in Southern Illinois, St. Joseph Lead Co. in New York, and the Tri-State Zinc Co. in Northern Illinois. Virtually all of the lead is produced in the region as a co-product or byproduct of zinc and fluorspar mining.

ZINC

Zinc production in States East of the Mississippi River was 156,334 tons in 1949, a decrease of 21,453 tons (12 percent) from the 1948 production of 177,787 tons.

Loss of output from the mines of the New Jersey Zinc Co. in New Jersey accounted for most of the decrease in zinc output for the region. The New Jersey mines were idle from September 26 to the end of the year because of a strike at the Palmerton, Pa. zinc smelter. Decreased zinc production also was reported for the Austinville (Virginia) mine of the New Jersey Zinc Co., and mines in the Kentucky-Southern Illinois district. New York, Tennessee, and the Wisconsin-Northern Illinois district reported a greater output in 1949 than in 1948.

In Kentucky and Southern Illinois the principal zinc producers were the Ozark-Mahoning Co., and the Minerva Oil Co. The slackening in demand for fluorspar in this district was the principal reason for a decrease in the quantity of zinc produced. In New York, the St. Joseph Lead Co. mines were worked continuously; operations at the Universal Exploration Co. mine were curtailed during the strike (October 1 - November 12) at the Donora, Pa., zinc smelter.

In Tennessee, the Tennessee Copper Co. operated steadily recording a small increase in zinc production. The American Zinc Co. of Tennessee suspended operations at its Athletic mine on June 20. However, the Company worked the Grasselli, Jarnagin and Mascot mines throughout the year, except for about a 3-week vacation period in July. Although the Universal Exploration Co. mine near Jefferson City was idle from October 7 to November 21, partly due to the shut-down at the Donora, Pa. smelter, output for the year was greater than in 1948.

In the Wisconsin-Northern Illinois district two new mines were opened. The Eagle-Picher Mining & Smelting Co. completed the Graham mill and started production in April at its properties located a few miles north of Galena, Ill., and the Calumet & Hecla Consolidated Copper Co. built the Shullsburg mill and began work in September at its properties in Wisconsin. The largest producer in the district was the Tri-State Zinc Inc. in Illinois. The Vinegar Hill Zinc Co., formerly the largest producer, closed its custom mill in Wisconsin August 4. However, exploration was continued and the construction of a mill was begun at the Company's properties south of Shullsburg.

Mine production of gold, silver, copper, lead, and zinc in States East of the Mississippi River, 1949, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January----------	210	9,000	3,318	706	14,931
February---------	183	9,665	3,176	602	14,140
March------------	223	9,336	3,288	748	15,627
April------------	192	9,747	2,856	793	14,899
May--------------	214	9,667	1,692	702	14,415
June-------------	184	9,568	1,604	777	15,001
July-------------	166	8,909	1,604	758	13,191
August-----------	183	8,962	1,795	747	14,128
September--------	156	8,744	3,237	765	13,258
October----------	26	8,453	3,095	767	8,863
November---------	106	8,549	3,330	688	8,855
December---------	165	8,740	3,315	666	9,026
Total: 1949----	2,008	109,340	32,310	8,719	156,334
1948----	2,479	101,171	42,025	10,706	177,787

Mine production of gold, silver, copper, lead, and zinc in States East of the Mississippi River, 1948-49, in terms of recovered metals

State	Gold		Silver		Copper		Lead		Zinc		Total
	Fine ounces	Value	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	Value
Georgia----	5	$175	-	-	-	-	-	-	-	-	$175
Kentucky-Southern Illinois---	-	-	2,990	$2,706	-	-	2,908	$924,744	7,106	$1,819,136	2,746,586
Michigan----	-	-	-	-	18,880	$7,438,720	-	-	-	-	7,438,720
New Jersey--	-	-	-	-	-	-	-	-	51,800	a/	a/
New York----	-	-	23,970	21,694	-	-	1,300	413,400	38,225	9,785,600	10,220,694
North Carolina---	13	455	-	-	-	-	-	-	-	-	455
Pennsylvania------	1,690	59,150	11,120	10,064	b/	b/	-	-	-	-	c/ 69,214
Tennessee---	170	5,950	42,834	38,767	13,430	5,291,420	100	31,800	29,778	7,623,168	d/12,991,105
Vermont-----	130	4,550	28,426	25,727	b/	b/	-	-	-	-	c/ 30,277
Virginia----	-	-	-	-	-	-	2,800	890,400	12,600	3,225,600	4,116,000
Wisconsin-Northern Illinois---	-	-	-	-	-	-	1,611	512,298	16,825	4,307,200	4,819,498
Total: 1949	2,008	70,280	109,340	98,958	32,310	12,730,140	8,719	2,772,642	156,334	e/26,760,704	e/42,432,724
1948	2,479	86,765	101,171	91,565	42,025	18,238,850	10,706	3,832,748	177,787	f/47,696,879	f/69,946,807

a/ Figures for value of New Jersey zinc not yet available.
b/ Pennsylvania and Vermont included under Tennessee; Bureau of Mines not at liberty to publish separate figures for Pennsylvania and Tennessee.
c/ Excludes value of copper, which is included under Tennessee.
d/ Includes also value of copper from Pennsylvania and Vermont.
e/ Excludes value of zinc from New Jersey.
f/ Includes value of zinc from New Jersey ($20,709,849), which represents estimated smelting value of recoverable zinc content of ore after freight, haulage, smelting, and manufacturing charges are added.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary** JAMES BOYD, **Director**

For immediate release

MINERAL MARKET REPORT
M. M. S. No. 1831
(Replaces November and
December monthly reports, 105 and 106)

MINE PRODUCTION OF ZINC IN THE UNITED STATES IN 1949 - PRELIMINARY ANNUAL FIGURES

Domestic mine output of recoverable zinc (including that recovered as zinc pigments and salts directly from ore) fell 7 percent in 1949 compared with 1948, and, except for 1946 when extended labor strikes paralyzed the industry, was the smallest since 1939, according to the Bureau of Mines, United States Department of the Interior. The principal factor contributing to the decline in zinc yield was the sharp drop in demand and price during the first half of the year which forced a number of mines to close, some of which later reopened, and brought about reductions in the length of the work week at most other properties. Labor-management disputes at several zinc mines and smelter, one lead smelter, and within the steel industry, also curtailed mine output. Regionally, the greatest declines in production were recorded in the States East of the Mississippi River where the combined 1949 output was 12 percent under 1948, and in the Mid-Continent States of Arkansas, Kansas, Missouri, and Oklahoma where production dropped 9 percent. Zinc output in the Tri-State district fell off for the eighth consecutive year and was the lowest in quantity since 1896. Partially offsetting these declines, however, were the expanded outputs recorded in Arizona, California, Colorado, New York, Tennessee and in the Wisconsin-Northern Illinois district.

The market price for Prime Western grade slab zinc, St. Louis, was quoted at 17.50 cents per pound until March 23 when it dropped to 16.00 cents. A series of price reductions followed thereafter until the quotation reached a low of 9.00 cents on June 15. During the latter part of the year the price fluctuated between 9.00 and 10.00 cents a pound and at year-end the market was quoted at a range of 9.75 to 10.00 cents.

This report which summarizes mine output for 1949 is part of the regular monthly zinc mine production series. As preliminary figures for November and estimates for December are included, the report serves both these months and the next issue will be for January 1950. The following table and State reviews for 1949, except for States East of the Mississippi River, were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all reports in this series. The figures are given in terms of recoverable zinc content of ores and concentrates.

Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

States East of the Mississippi River

Zinc production in States East of the Mississippi River totaled 156,334 tons in 1949, a decrease of 21,453 tons or 12 percent from the 1948 output. Loss of production from New Jersey Zinc Company mines in New Jersey which were idle from September 26 to the end of the year because of a labor strike at the Palmerton (Pa.) zinc smelter accounted for most of the decline. Decreased output was also reported for the Austinville (Va.) mine of the New Jersey Zinc Co. and mines in the Kentucky-Southern Illinois district. New York, Tennessee and the Wisconsin-Northern Illinois district reported a greater output in 1949 than in 1948.

In Kentucky and Southern Illinois the principal zinc producers were the Ozark-Mahoning Co. and the Minerva Oil Co. The slackening in demand for fluorspar from which zinc is produced as a byproduct in this district was the principal reason for a smaller zinc output in 1949 as compared with 1948. In New York the St. Joseph Lead Company mines operated continuously throughout 1949. During the latter part of the year the Universal Exploration Co. curtailed production owing to the steel strike (Oct. 1 - Nov. 12) which indirectly forced the closure of the Donora, Pa. zinc smelter.

In Tennessee the Tennessee Copper Co. recorded a small increase in zinc output. The American Zinc Co. of Tennessee suspended production at its Athletic mine June 20, but continued to operate the Grasselli, Jarnagin and Mascot mines, except for a 3-week vacation period in July. Despite an inoperative period from October 7 to November 21 output from the Universal Exploration Co. mine near Jefferson City exceeded the 1948 production.

In the Wisconsin-Northern Illinois district two new mines were opened. The Eagle-Picher Mining & Smelting Co. completed the Graham mill and began production from its properties located a few miles north of Galena, Illinois and the Calumet & Hecla Consolidated Copper Co. built the Shullsburg mill and started operations at its properties in Wisconsin. Production was first reported by the Eagle-Picher Mining & Smelting Co. in April and by the Calumet & Hecla Consolidated Mining Co. in September. The largest producer in the district was the Tri-State Zinc, Inc. The Vinegar Hill Zinc Co. formerly the largest producer closed its custom mill August 4.

Arkansas, Kansas, Missouri, and Oklahoma

Mine output of zinc in this region totaled 78,284 tons in 1949 compared with 85,892 tons in 1948, a decrease of 9 percent.

Tri-State (Joplin) district. - Zinc production in the Tri-State district, decreasing for the eighth consecutive year, was 9 percent less than in 1948 and the lowest since 1896. In the first few months of 1949 concentrate prices were high enough to support the mining of low-grade ore, which constitutes the bulk of the district reserves, and zinc output during March and April was the highest since June 1947. The sharp decline in the quoted price of zinc concentrates at Joplin -- from $110 a ton for the week ending March 19 to a low of $50 June 18 -- disrupted virtually all operations, causing about 50 of the mines to shut down and most of the other 76 active mines to cut back output. The July production of zinc concentrates, reduced to an exceptionally low level by previous shutdowns and a work stoppage at the mines and mills of the largest producer, was only 3,529 tons compared with 18,256 tons in the peak month of March. From August through December the price received by the producers for zinc conentrates averaged $56.18 a ton, and the monthly production averaged 10,534 tons.

Preliminary figures for 1949 show a district total production of 145,147 short tons of zinc concentrates compared with 159,609 tons in 1948. In terms of recovered metal, the production was 77,490 tons in 1949 and 84,839 tons in 1948. The recovery from crude ore averaged 3.13 percent in zinc concentrates and 0.92 percent in lead concentrates in 1949 compared with 3.43 and 0.83 percent, respectively, in 1948. About 80 mines, 15 mine mills, 1 tailing mill, and 1 slime or cleanup mill were operating in December 1949 compared with 120, 29, 4 and 3, respectively, in December 1948. The five leading zinc-producing companies in the district in 1949 were: Eagle-Picher Mining & Smelting Co., Nellie B. Mining Co., National Lead Co. St. Louis Smelting & Refining Division, Federal Mining & Smelting Co. and Dines Mining Co.

Arkansas. - Small tonnages of lead and zinc ore were shipped from mines in the Ponca district, Newton County, by Harry Primrose and C. W. Allen.

Western States

Mines in the combined Western States produced a total of 349,264 tons of recoverable zinc in 1949, a decline of 5 percent from the record 1948 output. About 60 percent of the total domestic production of zinc in 1949 (58 percent in 1948) came from mines in the Western States.

Arizona. - Despite a marked decline in the sales price of zinc, the Arizona output in 1949 was far greater than in any year in the State's history. Continuous operations of zinc-lead mines throughout 1949 resulted in an output of 70,050 tons of recoverable zinc. The Copper Queen mine at Bisbee, by far the largest zinc producer in the State in 1949, increased its output 29 percent over 1948. Other large producers of zinc were the Iron King mine at Humboldt, the San Xavier (Eagle-Picher Mining & Smelting Co.) mine south of Tucson, the Mammoth-St. Anthony property at Tiger, the United Verde operations at Jerome, the Trench-Flux group near Patagonia, and the Old Dick and Republic (Coronado Copper & Zinc Co.) properties in Cochise County. In 1949 these 8 properties produced 97 percent of the State zinc output. About 89 percent of the zinc production in 1949 was recovered from zinc-lead ore and most of the remainder from zinc-copper ore.

California. - Mine production of zinc in California was 7,300 tons, a 37-percent gain over 1948. The Anaconda Copper Mining Co. continued to be the State's principal producer of zinc and lead. The Company's Darwin and Shoshone mines were operated throughout the year except for a period from July to September when falling metal prices forced closure of the properties. Other important zinc mines operated in California during the year included the Penn mine in the Campo Seco district, Calaveras County and the Carbonate King Zinc mine in the Clark Mountain district of San Bernardino County.

Colorado. - Mine production of recoverable zinc in Colorado was 46,500 tons, an increase of 3 percent over 1948. All the leading zinc producers that were active in 1948 except the Rico Argentine mine in Dolores County continued operations throughout 1949. The five leading zinc producers, in order of output, were: New Jersey Zinc Co. Eagle mine, Eagle County; American Smelting & Refining Co. Kokomo unit, Summit County; Resurrection Mining Co. Resurrection group, Lake County; Idarado Mining Co. Treasury Tunnel-Black Bear group, and Telluride Mines (Inc.) Smuggler Union group, both in San Miguel County.

Idaho. - Although the output of recoverable zinc in Idaho dropped to 74,150 tons in 1949, 12,117 tons less than was produced in 1948, the State continued to be the largest zinc-producing State in the United States. The Star mine near Burke in the Coeur d'Alene region remained the largest Idaho producer of zinc; it was followed by the Page, Day Mines, Inc., Morning, Sidney, Bunker Hill & Sullivan mine, Frisco, Spokane-Idaho, and Highland-Surprise properties and Bunker Hill lead smelter slag dump. These 10 properties, all in the Coeur d'Alene region, produced 85 percent of the State total. About 96 percent of the State total zinc in 1949 came from the Coeur d'Alene region, and most of the remainder from the Warm Springs, Bayhorse, and Alder Creek districts.

Montana. - Zinc production in Montana was 50,825 tons, a drop of 14 percent from the 1948 total. With the exception of the Travona and Mike Horse mines, all the larger zinc producers in Montana reported declines in 1949. Decreases were particularly marked at Butte from June through September, following sharp breaks in the price of zinc. The leading zinc producers in 1949 were the Butte Hill mine and dumps and the Emma mine at Butte, the Mike Horse mine at Flesher, the East Helena old slag dump, and the Travona mine, which together supplied 98 percent of Montana's zinc.

Nevada. - Despite one of the most severe winters on record and sharp declines in base metal market prices the Nevada mine output of recoverable zinc in 1949 was slightly greater than the 1948 production. The Pioche district and adjacent Comet district, Lincoln County, together produced about 90 percent of the State's zinc in 1949. Virtually all the zinc was recovered from concentrates produced at the Combined Metals Reduction Co. Caselton mill. This mill treated ore from the company-operated mines and ore shipped to it from the Ely Valley Mine's Ely Valley mine, Prince Consolidated Mining Co.'s Prince mine, the Comet mine of the Comet Mines, Inc., and the Raymond Ely West mine, as well as small tonnages from other neighboring districts. Important producers of zinc in addition to those in the Pioche and Comet districts, included the Copper Canyon Mining Co., Copper Canyon mine, L. F. Jacobson, Yellow Pine mine, Yellow Pine district, Clark County, and Bristol Silver Mines Co., Bristol mine, Jack Rabbit district, Lincoln County.

New Mexico. - Mine production of recoverable zinc in New Mexico dropped 29 percent in 1949 and was the lowest in quantity since 1939. The nearly 49-percent decline in the price of zinc from March to June, with high production costs continuing, led to the closing of all but one of the seven major zinc-producing mines and most of the small-scale operations. The output of recoverable zinc in the last half of the year was only 5,819 tons compared with 23,681 tons in the first half. Large producers that suspended operations were the American Smelting & Refining Co. Ground Hog mine, the United States Smelting, Refining & Mining Co. Bayard group, the Kennecott Copper Corp. Oswaldo mine, the Peru Mining Co. Pewabic mine, the New Mexico Consolidated Mining Co. Kearney mine, all in the Central district, Grant County; and the Waldo mine of the American Smelting & Refining Co. at Magdalena. The foregoing six mines were among the seven leading producers of zinc in the State in 1949; the largest producer, the Empire Zinc Co. Hanover mine group in the Central district, operated throughout the year.

Utah. - Utah zinc production declined 5 percent from the 1948 output. Production dropped slightly at the United States & Lark unit and appreciably at the Tooele old-slag dump, New Park property, Silver King mine, and Pacific Bridge property. Increases were reported from the Butterfield group, Chief Consolidated property, Park Utah Consolidated property, and the Hidden Treasure mine. Leading producers of the metal in 1949, in order of output, were the United States & Lark unit, Chief Consolidated property, Park Utah Consolidated property, New Park property, Butterfield group, Tooele old-slag dump, Calumet mine, Hidden Treasure mine, and Pacific Bridge property. These 10 producers contributed 96 percent of the State total zinc.

Washington. - Although the property of the Pend Oreille Mines & Metals Co. made a large increase in zinc output in 1949, declines from the Holden, Deep Creek, and Grandview mines resulted in a net drop of 13 percent in the State total output as compared with 1948. Leading zinc producers in 1949, in order of output, were the property of the Pend Oreille Mines & Metals Co., and the Holden, Grandview, and Deep Creek mines, which together contributed 96 percent of the total zinc.

Mine production of recoverable zinc in the United States in 1948 and in 1949, by months 1/, in short tons

Region and State	Total 1948	January	February	March	April	May	June	July	August	September	October	November	December	Total 1949
States East of the Mississippi River:														
Southern Illinois & Kentucky......	7,422	700	549	774	1,057	829	590	407	304	476	477	439	504	7,106
Northern Illinois & Wisconsin.....	14,061	1,268	1,202	1,225	1,124	1,209	1,370	1,493	1,184	1,298	1,724	1,891	1,837	16,825
New York, New Jersey & Virginia	126,780	10,293	9,897	10,717	10,226	9,760	10,324	9,589	9,901	8,964	4,434	4,260	4,260	102,625
Tennessee........	29,524	2,670	2,492	2,911	2,492	2,617	2,717	1,702	2,739	2,520	2,228	2,265	2,425	29,778
	177,787	14,931	14,140	15,627	14,899	14,415	15,001	13,191	14,128	13,258	8,863	8,855	9,026	156,334
Mid-Continent:														
Arkansas..........	31	1	1	1	1	1	2	2	-	-	-	-	-	9
Kansas............	35,577	2,434	3,015	3,492	3,366	1,870	2,260	855	2,195	2,138	1,961	1,981	1,936	27,503
Missouri..........	6,463	707	856	824	693	531	277	204	344	454	352	438	382	6,062
Oklahoma..........	43,821	3,841	4,423	5,484	5,358	4,581	3,858	869	2,651	3,253	3,384	3,510	3,498	44,710
	85,892	6,983	8,295	9,801	9,418	6,983	6,397	1,930	5,190	5,845	5,697	5,929	5,816	78,284
Western States:														
Arizona..........	54,478	4,725	5,180	5,905	5,750	5,865	6,565	5,635	5,990	5,695	6,340	6,300	6,100	70,050
California........	5,325	600	810	1,060	950	820	630	90	150	290	650	610	640	7,300
Colorado..........	45,164	3,046	3,818	4,396	3,915	3,930	3,913	3,598	4,325	3,832	3,796	4,113	3,818	46,500
Idaho.............	86,267	7,455	6,285	7,430	7,245	7,110	7,200	6,495	6,535	4,315	3,750	4,330	6,000	74,150
Montana...........	59,095	5,500	5,320	5,965	5,040	5,520	4,085	3,525	3,585	2,585	3,060	3,280	3,360	50,825
Nevada............	20,288	1,420	2,140	2,300	2,410	2,110	1,550	1,300	1,180	1,560	1,550	1,490	1,510	20,520
New Mexico........	41,502	3,241	3,745	4,325	4,208	4,302	3,860	1,547	902	869	876	804	821	29,500
Oregon............	-	-	-	-	-	-	-	-	3	3	1	1	1	9
South Dakota......	29	-	-	-	-	-	-	-	-	-	-	-	-	-
Utah..............	41,490	2,965	2,535	4,450	4,540	4,060	4,145	2,410	2,470	2,945	2,775	2,950	3,120	39,365
Washington........	12,638	790	695	790	810	810	925	535	610	690	1,465	1,450	1,475	11,045
	366,276	29,742	30,528	36,621	34,868	34,527	32,873	25,135	25,750	22,784	24,263	25,328	26,845	349,264
Alaska 2/..........	22	-	-	-	-	-	-	-	-	-	-	-	-	-
Total United States	629,977	51,656	52,963	62,049	59,185	55,925	54,271	40,256	45,068	41,887	38,823	40,112	41,687	583,882
Daily average 3/...	1,721	1,666	1,891	2,001	1,972	1,804	1,809	1,298	1,454	1,396	1,251	1,337	1,345	1,600

1/ Revised figures. 2/ Alaska monthly totals based on smelter receipts. 3/ Based on number of days in the month without adjustment for Sundays and holidays.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For immediate release

MINERAL MARKET REPORT
MMS NO. 1832
(Replaces November
and December monthly
reports, 102 and 103)

MINE PRODUCTION OF LEAD IN THE UNITED STATES IN 1949 - PRELIMINARY ANNUAL FIGURES

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Domestic mine output of recoverable lead rose 3 percent in 1949 compared with 1948 and was the largest since 1944, according to the Bureau of Mines, United States Department of the Interior. This gain reflected the incentive of high market prices during the early part of the year and also fewer interruptions in operation due to labor-management disputes such as the labor strike which shut down the large lead mines in Southeastern Missouri for 2½ months in 1948 at an estimated loss of 25,000 tons of lead. A downward trend in lead price which began in March and continued through May resulted in some mine closings and reduced work weeks at most large lead-producing properties but failed to offset completely the net gain in output recorded during the early part of 1949. Except for January, production during the first half of the year was at a rate consistently in excess of the 1,107-ton average daily output for the entire year. Production during the latter half of the year, however, fell off sharply and the daily output remained below the annual average. The daily production rate in December was 14 percent above the low point of the year, reached in October, but was only 85 percent of the March rate, which was highest for the year.

Production in 8 of the 18 lead-producing States in 1949 exceeded the rates established in 1948 and in some instances record and near-record high outputs were recorded. In Arizona the production was far greater than in any other year in the State's mining history, and not since 1917 have California mines produced as much lead as was recovered in 1949. Colorado lead output reached the highest point since 1927 and in Nevada the 1949 production was larger than any year since 1935. Similar but less spectacular records were established in the Mid-Continent region where Oklahoma lead output exceeded that of every year since 1942; Kansas production hit a five-year high; and Missouri mines closely approached the 1947 output.

The market price for common lead, New York, was quoted at 21.50 cents a pound until March 9 when it dropped to 19.50 cents. A series of price reductions followed thereafter until the quotation reached a low of 12.00 cents on May 26. A one-cent increase occurred on July 8 and several additional increases established the quotation at 15 - 1/8 cents on August 8. The price trended downward beginning September 26 and leveled off at 12.00 cents on November 21, at which point it remained the balance of the year.

Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

This report which summarizes mine output for 1949 is part of the regular monthly lead mine production series. As preliminary figures for November and estimates for December are included, the report serves both these months and the next issue will be for January 1950. The following table and State reviews for 1949, except for States East of the Mississippi River, were obtained from current preliminary reports of the western field offices of the Bureau of Mines, a procedure followed in the preparation of all reports in this series. The figures are given in terms of recoverable lead content of ores and concentrates.

States East of the Mississippi River

Mine production of lead from this region came from properties in Illinois, Kentucky, New York, Tennessee, Virginia, and Wisconsin, and totaled 8,719 tons, a drop of 19 percent from the 1948 output. Reduced production from the Austinville mine of the New Jersey Zinc Co. in Virginia accounted for most of the decrease as output from other States showed little change from 1948. The principal lead producers in this region were the New Jersey Zinc Co. of Virginia, Ozark-Mahoning Co. in Southern Illinois, St. Joseph Lead Co. in New York, and the Tri-State Zinc Co. in Northern Illinois.

Arkansas, Kansas, Missouri, and Oklahoma

Reversing the preceding 6-year's downward trend, total lead production in this area rose 23 percent in 1949 over 1948. This increase was due primarily to continuous operation in 1949 of the large lead mines in Southeastern Missouri, which in 1948 were shut down 2½ months by labor strikes.

Southeastern Missouri. - The St. Joseph Lead Co., largest producer of lead in the United States, operated its Bonne Terre, Desloge, Federal (including Doe Run), and Leadwood groups of mines and four mills with a combined daily capacity of 26,400 tons in St. Francois County and the Mine La Motte mine and 2,000-ton mill in Madison County. Steady production rates were maintained throughout the year, and the company continued to do extensive exploratory drilling and development work. The National Lead Co., St. Louis Smelting & Refining Division operated continuously its Madison lead-copper mine and 1,200-ton all-flotation mill at Fredericktown; the output of both lead and copper concentrates showed a large increase over 1948. The Catherine-Fleming mine was operated by the Park City Consolidated Mines Co. from January to March and by the Fredericktown Lead Co. the rest of the year. In Jefferson County the Fredericktown Lead Co. ceased work on the Valle Mine property in May.

Tri-State (Joplin) district. - Lead production in the Tri-State district gained despite curtailments in ore output rates and shutdowns caused by falling metal prices On March 5 the weekly quoted price of lead concentrates was $290.92 a ton and in the slightly more than two months that followed the quotation dropped without interruption to $148.63 on May 28. About 50 of the mines shut down and most of the other 76 active mines curtailed production sharply. Production of lead concentrates in June was 34 percent under the March output. In July the market price advanced to $183.91 but the monthly production was the lowest of the year, as the mine and mills of the Eagle-Picher Mining & Smelting Co. were shut down by a work stoppage from July 1 to August 7, and other mines shipping to the company's Central mill could not operate during this period. The district's lead output in the last half of the year was 37 percent less than in the first half. The five leading lead-producing companies in 1949, in order of output, were: Eagle-Picher Mining & Smelting Co., Nellie B. Mining Co., Federal Mining & Smelting Co., National Lead Co. St. Louis Smelting & Refining Division, and the Harris Mining Co.

Arkansas. - Small tonnages of lead and zinc ore were shipped from mines in the Ponca district, Newton County, by Harry Primrose and C. W. Allen.

Western States

Mine production of recoverable lead in the combined Western States was 238,843 tons in 1949, a 5-percent decline from 1948. The Western States contributed 59 percent of the total domestic production compared with 65 percent in 1948.

Arizona. - The output of lead in Arizona in 1949 was far greater than in any previous year in the State's history. Continuous operations at lead and zinc-lead mines throughout 1949 resulted in a total production of 33,400 tons of recoverable lead, a gain of about 3,500 tons over the record output in 1948. The 900-ton flotation mill at the Copper Queen branch of the Phelps Dodge Corp. at Bisbee treated 28 percent more zinc-lead ore than in 1948, and the property remained by far the largest producer of lead and zinc in Arizona. Other large producers of lead were the Mammoth-St. Anthony property at Tiger, the San Xavier (Eagle-Picher Mining & Smelting Co.) south of Tucson, the Iron King mine at Humboldt, and the Trench-Flux group near Patagonia. In 1949 these five properties produced 90 percent of the State lead output. About 93 percent of the lead output in 1949 was recovered from zinc-lead ore, and the rest largely from lead ore.

California. - The California mine production of recoverable lead was 10,130 tons in 1949, an 11-percent gain over 1948 and the highest recorded since the record output of 10,387 tons in 1917. The Anaconda Copper Mining Co. worked the Darwin group of mines in the Coso district, Inyo County continuously throughout the year, except for a period from July to September when operations were ceased due to falling base metal prices, and continued to be the State's leading producer of lead. Other important lead mines operated in California in 1949 included Anaconda's Shoshone group, also in the Coso district, the Defense and Minnietta mines in the Modoc district of Inyo County, and the Mohawk group in the Clark Mountain district of San Bernardino County.

Colorado. - Colorado mine production of lead in 1949 increased 7 percent over the 1948 output and was the highest since 1927. All the leading lead producers that were active in 1948, except the Rico Argentine mine in Dolores County, continued operations throughout 1949. The five leading Colorado producers, in order of output, were the Resurrection Mining Co. group at Leadville, Lake County; American Smelting & Refining Co. Kokomo Unit, Summit County; Idarado Mining Co. Treasury Tunnel-Black Bear group, San Miguel County; Shenandoah-Dives Mining Co. Shenandoah-Dives group near Silverton, San Juan County; and the Telluride Mines, Inc. Smuggler Union group at Telluride, San Miguel County.

Idaho. - Idaho's mine output of recoverable lead decreased to 77,100 tons in 1949, a drop of 11,444 tons from that in 1948. The work stoppage from August 20 to November 19 at the strike-bound Bunker Hill lead smelter at Bradley coupled with substantial decreases in base metal prices during the year were the principal factors limiting output. The Bunker Hill & Sullivan mine remained the largest lead producer in Idaho in 1949, although its output declined 13 percent from that in 1948. Other large producers of lead, in order of output, were the Page, Day Mines, Inc., Star, Morning, Sidney, Sunshine, Triumph, Bunker Hill & Sullivan tailings, Frisco, Spokane-Idaho, Highland-Surprise, and Polaris properties; the first 10 properties -- each with an output of more than 2,200 tons of lead -- produced 85 percent of the State total. About 93 percent of the State lead output came from properties in the Coeur d'Alene region; the remainder came largely from the Warm Springs, Alder Creek, and Bayhorse districts. Zinc-lead ore and old tailings supplied 80 percent of the total lead, and lead ore and silver ore most of the remainder.

Montana. - Lead production in Montana in 1949 was 17,825 tons, a decrease of 3 percent from the 1948 figure. As in most other producing areas, the drop in output was largely the result of declining base metal prices which forced closure of some smaller properties and brought about curtailed activity at other operations.

At the Butte properties of the Anaconda Copper Mining Co. a five-day work-week went into effect early in June, underground mining was reduced, shipments of zinc-lead dump ore ceased, and work on the Greater Butte Project was temporarily suspended. In mid-November shipments of dump ore were resumed. The four leading lead producers which supplied 82 percent of the State lead in 1949, were the Butte Hill mine and dumps at Butte, the Mike Horse mine at Flesher, the Emma mine at Butte, and the Jack Waite mine in Sanders County.

Nevada. - Lead output from Nevada mines in 1949 surpassed the 1948 production by 13 percent to reach the highest level since 1935. The Pioche district and adjacent Comet district, Lincoln County, together accounted for about 60 percent of the 11,050 tons of lead produced in the State in 1949. A large percentage of the lead was recovered from concentrates produced at the Combined Metals Reduction Co. Caselton mill. This mill treated ore from the company-operated mines and ore shipped to it from the Ely Valley Mine's Ely Valley mine, Prince Consolidated Mining Co.'s Prince mine, the Comet mine of the Comet Mines, Inc., and the Raymond Ely West mine, as well as small tonnages from other neighboring districts. Important producers in addition to those in the Pioche and Comet districts included the Copper Canyon Mining Co. Copper Canyon mine, L. F. Jacobson, Yellow Pine mine, Yellow Pine district, Clark County, Bristol Silver Mines Co. Bristol mine, Jack Rabbit district, Lincoln County, McFarland & Hullinger, Cleveland mine and Lee Bayless, Delno mine, both in the Delano district, Elko County.

New Mexico. - The mine production of lead in New Mexico, the bulk of which comes from mines yielding chiefly zinc, declined 40 percent from 1948. The larger producers in 1949 were the American Smelting & Refining Co. Ground Hog and United States Smelting, Refining & Mining Co. Bayard groups in the Central district and the Waldo group (American Smelting & Refining Co.) and Lynchburg (S. S. Elayer) in the Magdalena district.

Utah. - Mine production of lead in Utah in 1949 was 51,585 tons, a decline of 8 percent from the 1948 figure. Because of a reduced work week, followed by stoppages at three of the larger lead producers and serious curtailment at the fourth in the Park City region, output of lead for the year declined markedly at the properties of the New Park Mining Co., Park Utah Consolidated Mines Co., Silver King Coalition Mines Co., and Pacific Bridge Co. The Calumet mine in the Rush Valley district also produced less lead than in 1948. Counterbalancing this loss in part were increases in lead yield from the United States & Lark unit, Chief Consolidated property, Butterfield group, and Hidden Treasure mine. The leading lead producers in 1949 were the United States & Lark unit, Chief Consolidated property, Butterfield group, Park Utah Consolidated property, New Park property, Calumet mine, Silver King mine, and Hidden Treasure mine. These eight properties produced 92 percent of the State total lead.

Washington. - Despite a work stoppage most of the year at the Grandview mine of the American Zinc, Lead & Smelting Co. in the Metaline district, normally the State's largest lead producer, lead output in Washington in 1949 was less than 1,000 tons under the 1948 figure. The Bonanza mine reported a substantial increase in lead yield, and the property of the Pend Oreille Mines & Metals in the Metaline district made a small gain; production dropped at the Deep Creek mine in Stevens County. Leading State producers of lead in 1949 were the property of the Pend Oreille Mines & Metals Co., and the Bonanza, Grandview, and Deep Creek mines. From these four operations came 96 percent of the State lead.

Lead was also recovered from ores mined in Oregon and Texas.

Alaska

Production of lead in 1949 totaled 70 tons, a decrease of 79 percent from 1948. Virtually all the output came from the Riverside mine near Hyder in the Southeastern Alaska region.

Mine production of recoverable lead in the United States in 1948 and 1949, by months 1/, in short tons

Region and State	Total 1948	January	February	March	April	May	June	July	August	September	October	November	December	Total 1949
States East of the Mississippi River:														
Southern Illinois & Kentucky......	2,965	242	145	263	295	224	280	235	226	229	267	260	242	2,908
Northern Illinois & Wisconsin.....	1,807	112	96	128	108	125	141	171	151	165	173	121	120	1,611
New York, Tennessee & Virginia..	5,934	352	361	357	390	353	356	352	370	371	327	307	304	4,200
	10,706	706	602	748	793	702	777	758	747	765	767	688	666	8,719
Mid-Continent:														
Arkansas..........	22	3	1	2	2	2	1	-	-	-	-	-	-	11
Kansas............	8,386	753	932	973	906	638	698	149	649	774	714	772	682	8,640
Missouri..........	102,288	9,837	10,127	11,629	9,637	10,360	10,833	10,363	11,991	10,925	10,547	10,664	10,609	127,522
Oklahoma..........	16,918	1,646	1,970	2,183	2,068	1,736	1,448	306	1,365	1,833	1,893	1,941	1,838	20,227
	127,614	12,239	13,030	14,787	12,613	12,736	12,980	10,818	14,005	13,532	13,154	13,377	13,129	156,400
Western States:														
Arizona...........	29,899	2,320	2,430	2,815	2,890	2,835	3,170	2,725	2,680	2,720	2,980	2,950	2,885	33,400
California........	9,110	810	1,010	940	880	860	910	450	360	710	1,100	1,010	1,090	10,130
Colorado..........	25,143	2,035	1,907	2,211	2,316	2,227	2,055	2,199	2,584	2,482	2,202	2,306	2,276	26,800
Idaho.............	88,544	8,165	7,040	8,470	8,115	8,030	7,455	6,640	6,915	3,305	2,700	3,765	6,500	77,100
Montana...........	18,411	1,665	1,740	1,900	1,545	1,525	1,460	1,310	1,390	1,135	1,365	1,385	1,405	17,825
Nevada............	9,777	660	750	1,010	1,130	1,030	900	690	970	1,150	860	940	960	11,050
New Mexico........	7,653	487	610	858	599	764	612	296	183	84	26	46	35	4,600
Oregon............	7	-	-	-	-	-	-	2	3	3	2	1	2	13
South Dakota......	16	-	-	-	-	-	-	-	-	-	-	-	-	-
Texas.............	170	8	28	15	16	6	-	-	-	26	18	13	10	140
Utah..............	55,950	3,420	3,030	5,410	5,530	5,545	5,295	3,495	3,615	4,190	3,865	4,000	4,190	51,585
Washington........	7,147	495	385	550	550	470	455	395	400	425	680	690	705	6,200
	251,827	20,065	18,930	24,179	23,571	23,292	22,312	18,202	19,100	16,230	15,798	17,106	20,058	238,843
Alaska 2/..........	329	-	-	-	2	1	-	-	-	22	15	15	15	70
Total United States	390,476	33,010	32,562	39,714	36,979	36,731	36,069	29,778	33,852	30,549	29,734	31,186	33,868	404,032
Daily average 3/...	1,067	1,065	1,163	1,281	1,233	1,185	1,202	960	1,092	1,018	959	1,039	1,092	1,107

1/ Revised figures. 2/ Alaska monthly totals based on smelter receipts. 3/ Based on number of days in the month without adjustment for Sundays and holidays.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

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FEB 6

MINERAL MARKET REPORT
MMS NO. 1833

COPPER IN 1949
(Preliminary Report)

The drop in general industrial activity in midyear caused sharp declines in copper consumption, price and production, according to the Bureau of Mines, United States Department of the Interior, but in the rebound from the year's low points copper appeared to fare better than many other commodities. For the year as a whole the following decreases were recorded: consumption of new copper (including metal shipped to the strategic stock pile) 8 percent, mine production, 11 percent; smelter output from domestic ores, 12 percent; refinery output from domestic ores, 17 percent; from domestic and foreign primary materials, 13 percent; and the average price, 13 percent.

Receipts of unmanufactured copper probably were more than 5 percent above 1948 and were the largest since the all-time peak was established in 1945, being about 37 percent less than in that year. Exports of refined metal fell about 13 percent in 1949.

The decline in domestic production — mine, smelter and refinery — was brought about chiefly by a general reduction in the work week at larger mines from 48 to 40 hours and, in addition, to some mine closures. An important contributory factor was the labor strike at the Utah Copper mine, Bingham Canyon, Utah, in effect from October 24, 1948 until February 7, 1949. At the end of December 1949 operations of the important copper producers were again largely on a 6-day-week basis.

Production of refined copper from foreign crude materials in 1949 continued at close to the levels of 1948 and 1947.

Stocks of blister, refined and unrefined materials at smelters and refineries increased 25 percent during 1949 but that part in the form of refined shapes fell 9 percent.

A bill extending suspension of the excise tax on copper for 15 months, from April 1, 1949 to June 30, 1950, was signed by President Truman late on March 31. There was little opposition to this extension, but after the market broke, almost coincident with the signing of the bill, several unsuccessful attempts were made to withdraw the suspension law. At the Geneva conference in September 1948 provision was made for reduction in the tax from 4 to 2 cents; the end of suspension would establish the tax at the lower level.

Efforts to pass mine subsidy legislation did not come to fruition in 1949.

The average price for electrolytic copper f.o.b. Connecticut Valley dropped from 23.5 cents a pound in March to 16 cents in mid-June, and thereafter rose to 18.50

Prepared by Helena M. Meyer and A. J. McDermid, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

cents early in November, at which level it continued beyond the end of the year. The average of 19.50 cents for 1949 was 13 percent below the average of 22.34 cents for 1948. Refinery price quotations are given in the section on prices.

Data for most of the chief copper-producing areas of the world for the major part of the year indicate that world mine output may drop more than 5 percent in 1949 owing to declines in Chile and the United States only partially offset by gains in Northern Rhodesia and Canada. Thus, world production may be expected to be close to 2,400,000 short tons compared with 2,558,000 tons in 1948.

Production. - The following two tables include 1949 figures based on results of preliminary survey, covering 11 months' actual figures plus company estimates for December.

Copper produced by smelters from domestic ores, 1945-49,
in short tons

1945	782,726
1946	599,656
1947	862,872
1948	842,477
1949	750,000

The estimated smelter production for December amounted to 72,000 tons or an increase of 17 percent over the average for the preceding 11 months. The total for the year was 11 percent less than in 1948.

Refinery production of new copper from domestic sources declined 17 percent in 1949 and that from foreign sources was virtually unchanged as compared with 1948.

Refined copper produced at primary plants from domestic and foreign
ores and from secondary material, 1945-49, in short tons

Year	Domestic ores	Foreign ores	Total new copper	Secondary
1945	775,738	332,861	1,108,599	96,662
1946	578,429	300,233	878,662	105,572
1947	909,213	250,757	1,159,970	269,085
1948	860,022	247,424	1,107,446	245,376
1949	710,500	248,500	959,000	219,000

Total output of secondary copper is shown in the accompanying table. Production from scrap declined much more severely than that from primary materials.

Secondary copper produced in the United States 1945-49, in short tons

	1945	1946	1947	1948	1949
Copper recovered as unalloyed copper	112,856	136,909	303,092	284,026	242,000
Copper recovered in alloys 1/	893,660	666,637	658,649	688,762	495,000
Total secondary copper	1,006,516	803,546	961,741	972,788	737,000
From new scrap	509,421	397,093	458,365	467,324	342,000
From old scrap	497,095	406,453	503,376	505,464	395,000

1/Includes copper in chemicals, as follows: 1945, 18,666; 1946, 19,192; 1947, 18,838; 1948, 17,612; 1949, 15,000.

Foreign trade. - Statistics on imports and exports are compiled from records of the Department of Commerce. Figures for 11 months make it appear that the annual import total for 1949 will be over 5 percent above the 1948 level, but little more than 60 percent of the peak rate in 1945. Refined copper imports, which predominated during the war and made up more than half of the total in 1942-45, lost first place in 1946 and 1947, but was pre-eminent among import classifications again in 1948 and 1949 and in 1949 again accounted for more than half of the total.

Copper (unmanufactured) imported into the United States in January-November 1949, by countries, in short tons
(general imports)

	Ore (copper content)	Concentrates (copper content)	Regulus, black or coarse copper (copper content)	Unrefined black blister and converter in pigs or converter bars	Refined in ingots, plates or bars	Old and clippings for remanufacture
Bolivia	992	2,789	4	—	—	—
Canada	246	25,134	518	29	43,928	2,334
Chile	3,642	17,228	199	46,094	200,402	175
Cuba	86	12,989	—	—	—	244
Malta, Gozo, etc	—	1/6,888	—	—	—	—
Mexico	261	9,628	739	46,108	1,133	8
Newfoundland and Labrador	—	3,934	—	—	—	36
Northern Rhodesia 2/	—	115	1	16,652	—	13
Peru	346	5,705	538	309	12,459	5
Philippines, Republic of	(3)	3/6,968	—	—	—	59
Union of South Africa	294	4,921	—	2,771	—	87
Yugoslavia	—	—	—	12,022	—	—
Other countries	737	1,149	78	22	295	3,115
	3/6,604	3/97,448	2,077	124,007	258,217	6,076

1/ Cyprus.
2/ Includes copper credited in Commerce records to Southern Rhodesia.
3/ Some copper in "ore" and "other" from Republic of Philippines is not separately classified and is included under "concentrates."

Refined copper was by far the chief copper export classification in 1949 having resumed first place in 1946; in every year except 1944 and 1945 since before 1900 the refined class has been preeminent. Exports of refined copper declined 13 percent in the first 11 months of 1949 as compared with the like period in 1948.

Exports of copper in bars, ingots, etc., in January-November, 1949, by principal countries of destination, were as follows:

	Short tons		Short tons
Argentina	1,641	Italy	15,213
Austria	2,258	Netherlands	11,083
Belgium and Luxembourg	1,404	Norway	495
Brazil	2,972	Pakistan	609
Denmark	652	Sweden	2,240
France	18,882	Switzerland	8,726
Germany	9,896	United Kingdom	20,154
Greece	174	Other	1,161
India	17,833		115,393

Exports of the other classes of copper in the first 11 months of 1949 were as follows:

	Short tons
Ore, concentrates, etc. (copper content)	194
Old and scrap	7,403
Pipes and tubes	3,117
Plates, sheets and strips	932
Rods	11,869
Wire: Bare	7,357

Insulated wire figures no longer available on basis comparable with earlier years.

Stocks. - Producers estimated that inventories of refined copper at refineries would total 61,000 tons at the end of 1949, or a drop of 9 percent from the very low stocks at the end of 1948. Stocks of blister at smelters, in transit to refineries and of unrefined materials at refineries, on the other hand, were expected to be 37 percent higher at the end than at the beginning of the year so that total smelter and refinery stocks were expected to rise 25 percent. Bureau of Mines' stocks are on a physical basis showing metal at smelters and refineries and in transit to refineries, regardless of ownership.

Stocks of copper at primary smelting and refining plants
at the end of the year, 1945-49, in short tons

Year	Refined copper	Blister and unfinished materials
1945	130,000	331,000
1946	96,000	254,000
1947	60,000	213,000
1948	67,000	183,000
1949	61,000	251,000

Apparent consumption. - Preliminary figures indicate that 8 percent less new copper entered into consumption channels in 1949 than in 1948. These figures refer to apparent consumption and take Office of Metals Reserve inventories but not consumers' holdings into account. Office of Metals Reserve stocks were dissipated in 1948. Consumption of new copper, according to the calculations, approximated

1,118,000 short tons, compared with 1,214,000 tons in 1948. Some copper refined on toll from imported scrap is doubtless included in refined exports. Because the quantities are not separable they cannot be excluded and corresponding additions to supplies cannot be made. Consumption figures for both years are thus probably a little low. The method of calculation of apparent consumption is shown as follows:

New refined copper withdrawn from total year's supply
on domestic account, 1948-49, in short tons

	1948	1949
Refinery production of new copper from domestic sources	860,022	710,500
Refinery production of new copper from foreign sources	247,424	248,500
	1,107,446	959,000
Imports of refined copper (Dec. 1949 estimated)	249,124	278,000
Total new refined	1,356,570	1,237,000
Stocks of new refined copper on January 1	60,000	67,000
Total supply	1,416,570	1,304,000
Exports of refined copper (ingots, bars, or other forms) (December 1949 estimated)	142,598	125,000
Stocks December 31	67,000	61,000
	209,598	186,000
Total withdrawn on domestic account	1/ 2/ 1,214,000	2/ 1,118,000

1/ Allowance has been made for reduction in the Office of Metals Reserve inventories of refined shapes. No such stocks remained at the end of 1948.
2/ Includes copper delivered to the Government strategic stock pile.

Prices. - The average price for electrolytic copper, f.o.b. refinery, was 23.2 cents a pound at the beginning of the year. In decreasing to 22.95 cents at the end of March the copper price lagged behind initial declines for lead and zinc. Subsequent drops carried the copper price to 15.7 cents on June 17, but an upward movement begun with the rise to 16.525 cents on July 6; additional increases carried the price to 18.2 cents in early November, at which level it remained beyond the end of the year. The average price of 19.202 cents for the year was 13 percent below that of 22.038 cents in 1948. The average price for export copper, f.o.b. refinery, was 19.421 cents in 1949 compared with 22.348 cents in 1948.

The price of the British Ministry of Supply was £140 per long ton (equivalent to 25.20 cents a pound) at the beginning of 1949. In mid-May the price was reduced to £130 (23.39 cents a pound), in the first half of June to £117 10s (21.13 cents a pound) and early in July to £104 (18.71 cents a pound). It was raised almost immediately to £107 10s (19.34 cents a pound). In mid-September the British pound was devalued and price quotations were suspended for a few days. On September 22 the sterling price was £140 per long ton (equivalent at the new $2.80 base to 17.50 cents a pound). In November the price moved to £153 (19.125 cents a pound) and remained at that level through the remainder of the year.

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MINERAL MARKET REPORT
MMS NO. 1834 (corrected)

LEAD AND ZINC PIGMENTS AND ZINC SALTS IN 1949
(Preliminary Annual Report)

Errata slip

This report is to replace MMS 1834 - Lead and Zinc Pigments and Zinc Salts in 1949 (Preliminary Annual Report). It is identical with the earlier report except for the paragraph on foreign trade, page 3, and the export table, page 4. MMS-1834 should be destroyed.

MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORT
MMS NO. 1834 (corrected)

LEAD AND ZINC PIGMENTS AND ZINC SALTS IN 1949
(Preliminary Annual Report)

Sharp declines in shipments of lead and zinc pigments and zinc salts featured the industry in 1949, according to the Bureau of Mines, United States Department of the Interior. The ranges in pigment decreases were from 17 percent for red lead to 40 percent for white lead in oil, and from 27 percent for lead-free zinc oxide to 46 percent for the leaded variety; zinc chloride fell 21 percent and zinc sulfate 7 percent (the smallest drop in the products covered by this report). There were diversified movements in the industries which are the chief consumers of pigments, i.e., automobile production rose 17 percent to a new all-time peak and total value of construction put in place, both private and public exceeded $19 billion, topping the 1948 record by 3 percent, whereas the value of sales of paints, varnish and lacquer materials fell about 9 percent, consumption of natural rubber 8 percent and of the synthetic type 6 percent; production of synthetic rubber dropped 23 percent, indicating a more pronounced decline in need for pigments than consumption data.

A reduction in inventories of pigments at consumers' plants may explain the relatively greater drop in shipments of pigments than in the level of activity in pigment-consuming industries.

Supplies of raw materials required for pigment manufacture were greater in 1949 than in any other postwar year. Inadequate raw-materials supplies retarded production of some pigments during and since the war and was an important item in the establishment in 1948 of all-time record prices for the lead classes, and of peaks for many years in the zinc group. Although prices dropped substantially in 1949, generally following sharp cuts in quotations for lead and zinc metal, year-end prices for pigments remained considerably above levels prevailing prior to 1947.

White lead (dry) shipments dropped 39 percent and those of the "in oil" variety 40 percent, both grades were the smallest by far since considerably before the beginning of the present century; total white lead shipments amounted to only 27 percent of the annual average for 1935-39. Litharge shipments fell 24 percent in 1949 and were the smallest since 1943. Red lead dropped 17 percent, the smallest decline in the pigments covered by this report, and was the smallest since 1933.

Lead-free zinc oxide shipments declined 27 percent and were the smallest since 1942 when output was adversely affected by stringent supplies of zinc metal and scrap. Production (108,600 tons in 1949) was adversely affected by the labor strike beginning September 26 and lasting beyond the end of the year at the Palmerton, Pennsylvania, plant of the New Jersey Zinc Co. This closure also reduced outputs of the leaded grades and of lithopone. Shipments of leaded zinc oxide declined 46 percent in 1949 and were the lowest since 1935, whereas those of lithopone fell 43 percent and were the smallest since 1921. Production of leaded zinc oxide was

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Prepared by Helena M. Meyer and Alethea W. Mitchell, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

35,700 tons in 1949 and of lithopone was 69,700 tons.

Zinc chloride and zinc sulfate shipments dropped 21 and 7 percent, respectively in 1949. Those for zinc chloride were the smallest since 1943 and of zinc sulfate since 1944. Zinc chloride output was 53,200 tons and zinc sulfate, 20,900 tons. Zinc sulfate production and shipments, in terms of 100 percent $ZnSO_4$, were 16,000 and 15,300 tons, respectively.

Some lead and zinc pigments and zinc salts shipped by domestic manufacturers in the United States, 1946-49, in short tons

	1946	1947	1948	1949
Basic lead sulfate 1/ or sublimed lead:				
White	(2)	(3)	(3)	(3)
Blue	(2)	(3)	(3)	(3)
Red lead	32,526	36,064	30,787	25,700
Orange mineral	123	------	------	------
Litharge	133,799	167,050	154,775	118,200
White lead:				
Dry	2/ 41,892	39,075	26,551	16,300
In oil 4/	24,609	29,712	19,519	11,700
Zinc oxide	157,851	160,771	150,958	110,600
Leaded zinc oxide	67,971	81,459	67,441	36,700
Lithopone	147,001	165,024	140,033	79,400
Zinc chloride, 50° B	57,316	65,521	68,701	54,300
Zinc sulfate	24,931	21,547	21,513	20,000

1/ Exclusive of basic lead sulfate used for the manufacture of leaded zinc oxide which is included in tonnages shown for that pigment. 2/ Basic lead sulfate included under white lead (dry) in 1946; Bureau of Mines not at liberty to publish. 3/ Bureau of Mines not at liberty to publish. 4/ Weight of white lead only.

There were substantial drops in average prices for lead pigments in 1949 from the all-time peak levels established in 1948. Zinc-pigment price quotations followed the same pattern. In most instances lead-pigment prices were at their lowest levels in June, had substantial recovery in the next several months and returned to or close to the midyear low levels in December. Zinc-pigment prices reached their lowest points a little later and after recoveries similar to those for lead pigments resumed downtrends, ending the year at better than the year's lowest levels.

Beginning and ending prices of representative pigments were as follows:

	Cents per pound	
	Beginning	End
White lead, basic carbonate, bags, less carlots, shipping point, freight allowed	23 1/10	15 3/4
Red lead, 95% Pb_3O_4 or less, barrels, less carlots, 5 tons, shipping point, freight allowed	25 1/4	15 3/4
Litharge, commercial, powdered, barrels, less carlots, 5 tons, shipping point, freight allowed	24 1/4	14 3/4
Zinc oxide, American process, commercial, lead-free, bags, less carlots, works	13 3/4	11 1/4
Zinc oxide, leaded, bags, less carlots, works, 5%	13 3/4	11 1/4
35%	15 3/8	12 - 12 1/4
50%	16 1/8	12 3/8 - 12 3/4
Lithopone, ordinary, bags, less carlots, shipping point	6 5/8 - 6 3/4	6 1/2 - 6 5/8

The most important items in foreign trade in lead and zinc pigments in the first 11 months of 1949 (12 months for 1948 shown in parentheses) were as follows: Exports of white lead (dry and in oil) totaled 684 (663) short tons; red lead, 1,006 (953) tons; litharge 1,168 (644) tons; zinc oxide, 4,805 (8,642) tons, and lithopone 13,828 (21,015) tons. Imports (for consumption) of litharge, red lead, white lead, zinc oxide, and zinc sulfate were 96, 19, 161, 3, and 80 short tons, respectively, for the first eleven months of 1949. Figures on imports and exports are obtained from records of the U. S. Department of Commerce. Data covering the two chief classes of exports, by destinations, are given in the following table.

Zinc oxide and lithopone exported from the United States, January - November 1949, by principal countries, in short tons

Zinc oxide		Lithopone	
France	1,132	Canada	4,968
Canada	853	Brazil	2,616
Cuba	775	Union of South Africa	1,155
Brazil	655	Mexico	1,066
Colombia	177	Chile	868
Chile	140	India	476
Norway	140	Peru	417
Uruguay	107	Cuba	374
Indonesia	107	Greece	287
Korea	89	Hong Kong	284
Argentina	76	China	174
Venezuela	74	Colombia	167
Greece	64	Venezuela	141
Other countries	416	Iran	115
		Ireland	111
	4,805	Philippines, Republic of	110
		Other countries	499
			13,828

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MINERAL MARKET REPORT
MMS NO. 1835

LEAD INDUSTRY IN 1949 - PRELIMINARY

The transition in lead supply from insufficiency to abundance accompanied by falling prices highlighted the domestic lead industry in 1949, according to the Bureau of Mines, United States Department of the Interior. Noteworthy also was the consumers' cautious buying and general lack of confidence in price stability which resulted in purchases of quantities substantially smaller than actual needs and a reduction in consumers' inventories of over 30 percent during the year. Some stability was rendered the lead market by the Government through purchase during the year of substantial tonnages of pig lead for the strategic stockpile. Contributing to the expanded supply was the high level of imports prevailing in 1949 which resulted in an accumulation of over 380,000 tons of lead from foreign sources, the largest annual tonnage imported in the peacetime history of the United States.

Although labor strikes continued to exact a toll on output of lead at both mines and smelters the total loss of production was not as great as in 1948. Total mine output advanced 3 percent in 1949 and production of refined lead at primary refineries rose 23 percent to the highest level since 1942. Lead from secondary sources continued to be a greater source of supply than production from domestic mines.

Refined primary lead made available for shipment to domestic consumers totaled approximately 543,000 short tons, a 15-percent drop from the comparable figure of 641,623 tons in 1948. Overall consumption of primary, antimonial, and secondary lead in the United States in 1949 is estimated at 900,000 tons, 21 percent less than the quantity consumed in 1948.

Production. - In 1949 the total mine production of recoverable lead in the United States (including that made into pigments) was 404,032 short tons, compared with 390,476 tons in 1948. Output in 8 of the 18 lead-producing States in 1949 exceeded the rates established in 1948 and in some instances record and near-record high outputs were recorded. In Arizona the production was far greater than in any other year in the State's mining history, and not since 1917 have California mines produced as much lead as was recovered in 1949. Colorado lead output reached the highest point since 1927 and in Nevada the 1949 production was larger than any year since 1935.

Preliminary data based upon reports from producers covering eleven months' actual output plus an estimate for December indicate that 504,500 tons of refined lead and 41,600 tons of antimonial lead were produced at primary refineries in 1949. Compared with 1948, refined lead output advanced 23 percent, whereas antimonial lead production dropped 59 percent. Output of refined lead would have been at

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Prepared by Richard H. Mote, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

least 20,000 tons larger in 1949 had not labor strikes closed the Bunker Hill & Sullivan smelter at Bradley, Idaho, from August 20 to November 19 and the American Smelting & Refining Co. refinery at Selby, California, beginning December 1.

Although some scrap lead is treated at primary smelters and refineries, the greater part is received at a large number of plants that treat secondary materials exclusively. Recovery of lead from scrap at primary and other plants dropped to an estimated 408,000 tons in 1949 compared with 500,071 tons in 1948. For the fourth successive year secondary lead production surpassed the output of recoverable lead from domestic mines.

Consumption. - In 1949 the calculated supply of refined primary pig lead made available for shipment from primary refineries to consumers (a close measure of consumption) totaled approximately 543,000 short tons, slightly more than 15 percent under the comparable figure of 641,623 tons in 1948. Based upon monthly reports from approximately 450 consumers of refined lead, antimonial lead, lead in scrap, and in alloys the total overall domestic lead consumption in 1949 is estimated at 900,000 tons. Consumption of lead for the manufacture of batteries, cable covering, and tetraethyl fluid accounted for 56 percent of all lead used, as reported by the monthly survey. Batteries took 31 percent of the total, cable lead 14 percent and tetraethyl fluid 11 percent.

Stocks. - Producers' stocks of refined primary lead increased 102 percent whereas inventories of antimonial lead fell off 8 percent, according to data obtained in the Bureau of Mines' preliminary annual survey of primary smelters and refineries. Consumers' lead stocks, which on January 1, 1949 were 119,198 tons, increased to 137,360 tons by April 1 but showed a downward trend thereafter and reached 95,535 tons on December 1, the lowest point of the year.

Price. - The market price for common lead, New York, was quoted at 21.50 cents a pound until March 9 when it dropped to 19.50 cents. A series of price reductions followed thereafter until the quotation reached a low of 12.00 cents on May 26. A one-cent increase occurred on July 8 and several additional increases established the quotation at 15-1/8 cents on August 8. The price trended downward beginning September 26 and leveled off at 12.00 cents on November 21, at which point it remained the balance of the year.

The price of the British Ministry of Supply was £123 per long ton (equivalent to 22.10 cents a pound) at the beginning of 1949. On April 4 the price was reduced to £106 (19.05 cents) and on May 16, June 10, and July 14, further reductions to £95 (17.07 cents), £82 (14.73 cents), and £75 (13.59 cents), respectively, took place. It was raised shortly thereafter to £81 (14.58 cents) on July 14 and continued to advance in three successive increases to £87 5s (15.71 cents) on August 9. In mid-September the British pound was devalued and price quotations were suspended for a few days. On September 22 the sterling price was £122 per long ton (equivalent to 15.25 cents a pound at the new $2.80 base). A reduction to £115 (14.38 cents) was announced, effective October 5 and on October 12 and 19 the price dropped to £111 (13.87 cents) and £105 (13.12 cents), respectively. A further decline to £97 (12.12 cents) occurred on November 23, at which level the quotation remained for the balance of the year.

Foreign trade. - Total imports of lead increased in 1949 to a record peacetime high but remained well below the wartime peak level established in 1942. As in previous years the greater part of the lead imported was in the form of pigs and bars; 45 percent of which came from Mexico, 20 percent from Canada, 13 percent from Peru, 8 from Yugoslavia, 7 percent from Australia, and 7 percent from 12 other countries. Imports of lead in base bullion, virtually all from Australia, were a little more than one-third of the quantity imported in 1948. Receipts of lead in ore, concentrate, and matte, principally from Bolivia, Union of South Africa, Peru, French Morocco, Australia, Newfoundland, and Mexico, totaled an estimated 100,000 tons, the largest quantity of such material imported since 1940.

Total exports of pig lead (excluding re-exports of foreign refined lead) increased from 399 tons in 1948 to 950 tons in 1949.

As Congress took no action on a bill to extend the temporary suspension of lead import duties beyond June 30, 1949, the expiration date of the original legislation, the import duty of 1-1/16 cents a pound on pig lead and 3/4 cent a pound on lead in ores and concentrates was reinstated automatically on July 1.

Table 1. - Refined lead produced at primary refineries in the United States, 1948-1949, in short tons

Year	From domestic ores and base bullion	From foreign ores and base bullion	From scrap	Total
1948....................	339,413	67,281	4,952	411,646
1949 (preliminary)........	1/ 388,000	2/	2/	504,500

1/ Estimate.

2/ Data not yet available.

Table 2. - Antimonial lead produced at primary lead refineries in the United States, in 1948 and 1949, in short tons

	Production	Antimony content		Lead content (by difference)			
		Weight	Percent	From domestic ore	From foreign ore	From scrap	Total
1948...	100,764	5,760	5.7	29,561	15,918	49,525	95,004
1949 1/	41,600	3,113	7.5	2/	2/	2/	38,487

1/ Preliminary.
2/ Data not yet available.

Table 3. - Secondary lead recovered in the United States, 1948-1949, in short tons

	1948	1949 (preliminary)
At primary plants:		
In refined lead..............................	4,952	1/
In antimonial lead...........................	49,525	1/
At secondary plants..........................	445,594	1/
Total..................................	500,071	2/ 408,000

1/ Data not yet available.
2/ Estimate.

Table 4. - Stocks of lead on hand at primary lead refineries in the United States at the end of 1948 and 1949, in short tons

Date	Refined lead	Antimonial lead 1/
December 31, 1948..................	29,048	9,258
December 31, 1949..................	58,800	8,500

1/ Lead content.

Table 5. - Consumers' stocks of lead at plants at the end of 1948 and November 1949, in short tons, lead content

Date	Refined soft lead	Antimonial lead	Unmelted white scrap	Percentage metals	Copper-base scrap	Drosses, residues, etc.	Total
Dec. 31, 1948	62,077	35,088	4,828	7,932	2,301	6,972	119,198
Nov. 30, 1949	62,467	16,769	3,296	5,067	1,859	6,077	95,535

Table 6. - Imports and exports of lead in 1948 and 1949, in short tons

Year	Imports			Exports
	Lead in ore and matte	Lead in base bullion	Pigs and bars	Pigs and bars
1948............	63,907	7,186	247,368	399
1949 1/..........	100,000	2,300	280,000	950

1/ Estimate base on 11 months' data.

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UNITED STATES DEPARTMENT OF THE INTERIOR
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MINERAL MARKET REPORTS
M. M. S. NO. 1836

ZINC INDUSTRY IN 1949 - PRELIMINARY

Domestic zinc smelters produced the largest quantity of slab zinc in the peacetime history of the industry, according to the Bureau of Mines, United States Department of the Interior. Output, up 2 percent over the 1948 level, totaled 870,000 short tons, 54 percent of which came from domestic ores, 40 percent from foreign ores and the remaining 6 percent from secondary sources. The use of foreign ores increased sharply over 1948 and production of slab zinc from this source gained 38 percent to nearly equal the record peak quantity of 348,059 tons produced in 1943. Output from domestic ores, however, dropped 13 percent to the lowest level since 1946. Redistilled secondary slab zinc production also declined in 1949. Domestic mine output of recoverable zinc fell 7 percent from 1948 and, except for 1946 when extended labor strikes paralyzed the industry, was the smallest since 1939. Idaho continued to lead the States in zinc mine production. A 23,318-ton drop in imports of zinc in ores and concentrates was more than offset by a 33,717-ton gain in slab zinc imports. As the over-all supply of zinc metal exceeded consumers' needs during most of the year, producers' inventories pyramided to more than 4½ times the quantity on hand at the beginning of the year. Consumers' stocks on November 30 were 21 percent under the January 1 inventory. The increasing availability of slab zinc was accompanied by a downward price readjustment from a high of 17.50 cents per pound to a low of 9.00 cents. At the end of the year one producer quoted the price at 10.00 cents but most sales were at 9.75 cents.

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Production. - In 1949 the total mine production of recoverable zinc (including that recovered as zinc pigments and salts directly from ore) was 583,882 short tons, compared with 629,977 tons in 1948. Except for 1946 when extended labor strikes paralyzed the industry, the 1949 output was the smallest since 1939. The principal factor contributing to the decline in zinc yield was the sharp drop in demand and price during the first half of the year which forced a number of mines to close, some of which later reopened, and brought about reductions in the length of the work week at most other properties. Labor-management disputes at several zinc mines and smelters, one lead smelter, and within the steel industry also curtailed mine output. Regionally, the greatest decline in production was recorded in the States East of the Mississippi River where the combined 1949 output was 12 percent under 1948. Loss of output from New Jersey Zinc Co. mines in New Jersey which were idle from September 26 through the end of the year because of a labor strike at the Palmerton (Pa.) zinc smelter accounted for most of the decline. In the Mid-Continent States of Arkansas, Kansas, Missouri, and Oklahoma production dropped 9 percent. Zinc output in the Tri-State district fell off for the eighth consecutive year and was the lowest in quantity since 1896. Partially offsetting these declines, however, were the expanded outputs recorded in Arizona, California, Colorado, New York, Tennessee, and in the Wisconsin-Northern Illinois district.

Prepared by Richard H. Mote and Esther B. Miller, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Total domestic production of slab zinc including primary metal from domestic and foreign ores and redistilled secondary metal from scrap (based upon producers' monthly reports for 11 months) was 870,000 short tons, an increase of 2 percent over 1948 and the largest tonnage in the peacetime history of the zinc industry. The use of foreign ore gained and the slab zinc produced from this source increased 38 percent virtually to equal the record peak quantity of 348,059 tons produced in 1943. Output from domestic ore, lowest since 1946, fell off 13 percent. Production of redistilled secondary slab zinc declined 12 percent from the 1948 level.

In addition to zinc ore required for the production of slab zinc, there are each year approximately 130,000 to 140,000 tons of zinc in ore consumed directly for the manufacture of zinc oxide and other zinc pigments without being first reduced to slab zinc. In 1948 the metal content of zinc pigments produced by domestic manufacturers from domestic and foreign ore totaled 130,482 short tons. Comparable figures for 1949 are not yet available.

Labor strikes continued in 1949 to exact a toll on the smelter output of slab zinc. The horizontal retort smelter at Fairmont City, Ill. and the secondary plant at Hillsboro, Ill. strikebound since August 1948, remained closed until the latter part of September and the end of August, respectively. The vertical retort smelter at Palmerton, Pa. was closed by strike on September 26 and continued idle throughout the balance of the year. Labor-management disputes at lead-producing operations in Idaho's Coeur d'Alene region forced curtailment in zinc output from one-third to one-half capacity at the electrolytic plant in Kellogg, Idaho. The horizontal retort plant at Donora, Pa. was closed from September 30 to November 11 and the coal strike brought about a 50-percent reduction in output at the Meadowbrook, West Virginia smelter.

Zinc-reduction plants. - During 1949, 19 primary zinc-reduction plants were in operation, of which 10 operated with horizontal retorts exclusively, 1 with both horizontal and vertical retorts, 3 with vertical retorts exclusively (1 electrothermic), and 5 with electrolytic methods. During the year the last of the horizontal retorts at the Palmerton, Pa. smelter were replaced by additional vertical retort furnaces. In contrast to the virtual extinction of horizontal retorts in the eastern United States was the addition of a new block of furnaces at the National Zinc Co. Bartlesville plant. The new unit constructed during the first half of the year and put into operation in June, contains 832 retorts and is designed to handle 50 tons of sintered zinc material per 48-hour cycle. Improvement in metallurgical techniques at other horizontal retort plants was evidenced by progress in mechanical charging of retorts at the Amarillo, Texas plant of the American Smelting & Refining Co. and the installation of a new rod mill at the Dumas, Texas plant of the American Zinc Co. of Illinois. The new mill mixes retort charges immediately before charging into the retorts and is said to provide a heavier charge per retort.

A new type of condenser developed by the New Jersey Zinc Co. for use with vertical retorts in the continuous distillation of zinc was put into commercial operation during the year. This innovation in the field of metal vapor condensation employs a motor-driven graphite impeller within the condenser to generate showers of molten zinc for scrubbing or cleaning zinc metal from the gas-vapor stream of the retorts. Water-cooled coils within the zinc bath maintain the temperature of the molten metal at 500°.

Consumption. - Slab zinc apparently made available for shipment to domestic consumers during 1949 totaled 773,858 tons, a decrease of 11 percent from 1948. Actual consumption of slab zinc at approximately 500 plants during 11 months of 1949 (632,605 short tons) plus an estimate for December indicate the 1949 consumption to be 703,600 tons, which included 1,649 tons of remelt zinc. A comparison of the calculated figure of slab zinc available to consumers and actual consumption since 1943 indicates that coverage of the plant survey is approximately 96 percent.

Galvanizing continued to be the largest field of zinc use in 1949 although the quantity consumed was less than the record peak consumption in 1948 owing to the labor strike which occurred within the steel industry during the latter part of 1949. Zinc-base alloys, largely die castings, continued as the second largest use of slab zinc, but, as in galvanizing, the quantity consumed in 1949 fell short of equalling the record high established in 1948. Consumption of slab zinc for the manufacture of brass products dropped sharply compared with 1948 as a result of the abnormally large return of brass scrap to the mills which reduced requirements for primary metals. Rolled zinc required nearly 34 percent less slab zinc in 1949 than in 1948.

Stocks. - Inventories of slab zinc at producers' plants were 93,964 tons on December 31, more than 4½ times larger than stocks on hand at the beginning of the year. The peak of the year was reached on October 31 when total stocks were 97,666 tons.

Consumers' stocks of slab zinc on November 30 were 76,255 tons, a decrease of 21 percent from the beginning of the year. At the average monthly rate of consumption for the first 11 months of 1949, consumers' stocks on hand on November 30 were approximately 1-1/3 months' requirements.

Price. - The market price for Prime Western grade slab zinc, St. Louis, was quoted at 17.50 cents per pound until March 23 when it dropped to 16.00 cents. A series of price reductions followed until June 15 when the quotation was 9.00 cents where it remained for a month. On July 18 the price increased to 9.50 cents and one week later to 10.00 cents. The remainder of the year the quotation fluctuated from 9.25 cents to 9.75 cents. One producer quoted its price at 10.00 cents but most sales were at 9.75 cents at the close of 1949.

The price of the British Ministry of Supply was £106 per long ton (equivalent to 19.05 cents a pound) at the beginning of the year. On April 4 it was reduced to £101 (18.15 cents) and on May 16, June 10 and July 12 further reductions to £85 (15.27 cents), £78 (14.01 cents) and £58 (10.44 cents), respectively, took place. Two weeks later it was raised to £63 10s. (11.43 cents) where it remained until mid-September when quotations were suspended. Due to the devaluation of the British pound on September 19, the quoted price as announced on September 22 was £87 10s. (equivalent to 10.94 cents a pound at the new $2.80 base). On October 8 a further reduction to £81 10s. (10.19 cents) was announced followed by 3 successive increases to £83 10s. (10.44 cents), £85 10s. (10.69 cents) and £87 10s. (10.94 cents) on October 28, November 3 and November 10, respectively. On November 23 the price was lowered to £85 10s. (19.69 cents) where it remained the remainder of the year.

Foreign trade. - Total imports of zinc in ores and concentrates in 1949 declined 9 percent. Of the 240,900 tons contained zinc imported, 60 percent came from Mexico, 25 percent from Canada, 6 percent from Peru, 3 percent from Union of South Africa, 2 percent each from Australia and Spain, 1 percent from Bolivia and the remaining 1 percent from Colombia, Honduras, Korea, Saudi Arabia, and Cuba.

Slab zinc imports totaled 127,000 tons and were 36 percent higher than the quantity imported in 1948. Canada supplied 86 percent of the total, Mexico 11 percent, Belgium 2 percent, and Norway, Australia, Burma and Japan accounted for the remaining 1 percent.

Exports of slab zinc in 1949 were 58,700 tons compared with 65,757 tons in 1948.

Tariff. - Import duties on zinc-bearing ores in 1949 remained at 3/4 cent per pound (zinc content) and on zinc in blocks, pigs or slabs and dust at 7/8 cent per pound.

Table 1. - Primary and redistilled secondary slab zinc produced in the United States, 1948-1949, in short tons

Year	Primary			Redistilled secondary	Total (excludes remelted)
	Domestic	Foreign	Total		
1948....	537,966	249,798	787,764	62,320	850,084
1949 1/	470,000	345,000	815,000	55,000	870,000

1/ Preliminary figures.

Table 2. - Distilled and electrolytic zinc, primary and secondary, produced in the United States, 1948-1949, in short tons

Year	Electrolytic primary	Distilled primary	Redistilled secondary		Total
			At primary smelters	At secondary semlters	
1948.....	312,477	475,287	28,070	34,250	850,084
1949 1/..	326,100	488,900	23,000	32,000	870,000

Classified according to grade

Year	Special High grade	Regular High grade	Inter-mediate	Brass Special	Selected	Prime Western	Total
1948.....	248,346	196,482	38,892	45,946	4,723	315,695	850,084
1949 1/..	230,500	192,000	22,800	2/424,700			870,000

1/ Preliminary figures.
2/ Separate figures not available.

Table 3. - Stocks of zinc on hand at primary and secondary zinc-reduction plants in the United States at the end of 1948 and 1949, in short tons

	At primary plants	At secondary plants	Total
December 31, 1948...	19,179	1,669	20,848
December 31, 1949...	90,452	3,512	93,964

Table 4. - Consumers' stocks of slab zinc at plants at the beginning of 1949 and November 30, by industries, in short tons

Industries	Galvanizing	Brass products	Zn-base alloy	Rolled zinc	Zinc oxide	Others	Total
January 1......	45,764	18,539	24,582	5,983		1,722	1/96,590
November 30....	41,704	10,260	17,831	5,120		1,340	1/76,255

1/ Stocks on January 1 and November 30 exclude 307 tons and 92 tons, respectively, of remelt spelter.

Table 5. - Imports and exports of zinc in 1948 and 1949, in short tons 1/

	Imports		Exports
	Zinc in ore	Slab zinc	Slab zinc
1948..................	264,218	93,283	65,757
1949..................	240,900	127,000	58,700

1/ From records of the Bureau of Census, U. S. Department of Commerce.

Table 6. - Slab zinc available for shipment to consumers in 1948-1949, in short tons

	1948	1949 (preliminary)
Supply:		
Stocks at primary smelters Jan. 1....	67,046	19,179
Stocks at secondary plants Jan. 1....	1,601	1,669
Production - primary.................	787,764	815,000
secondary...............	62,320	55,000
Imports of slab zinc.................	93,283	127,000
Total available....................	1,012,014	1,017,848
Withdrawn:		
Exports of slab zinc.................	65,757	58,700
Shipments to Government account......	57,598	91,526
Stocks at primary smelters Dec. 31...	19,179	90,452
Stocks at secondary plants Dec. 31...	1,669	3,512
Total withdrawn....................	144,203	244,190
Available to consumers.................	867,811	773,658

Table 7. - Consumption of slab zinc in the United States in 1948, and Jan.-Nov., inclusive, 1949, by industries, in short tons

	Galvanizing	Brass products	Zn-base alloy	Rolled zinc	Zinc oxide	Other	Total
1948...........	370,969	109,140	234,628	76,672	15,657	10,669	1/817,735
1949:							
January.......	29,226	8,983	17,416	5,563	1,900		63,088
February......	27,139	7,029	16,938	5,558	1,877		58,541
March.........	31,260	5,977	16,194	5,559	1,985		60,975
April.........	29,762	4,575	13,054	4,279	1,667		53,337
May...........	29,917	4,570	12,945	3,225	1,068		51,725
June..........	31,575	4,400	15,090	3,979	1,453		56,497
July..........	26,238	3,892	13,763	2,909	1,866		48,668
August........	34,640	7,702	18,469	5,421	2,106		68,338
September.....	34,154	7,737	18,482	5,162	1,815		67,350
October.......	13,560	8,930	18,988	4,014	429		45,921
November......	24,895	10,058	17,513	5,074	625		58,165
11-months' total.....	312,366	73,853	178,852	50,743	16,791		2/632,605
December estimate....							71,000
							2/703,605

1/ Includes 3,141 tons of remelt zinc.
2/ Includes 1,649 tons of remelt zinc.

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MINERAL MARKET REPORTS
M. M. S. No. 1837

MOLYBDENUM IN 1949

Substantial declines in the outputs of triple-alloy steel containing nickel, chromium, and molybdenum, chromium-molybdenum alloy steel, and molybdenum-type (6 percent molybdenum and 6 percent tungsten) high-speed steels and a smaller drop in production of molybdenum steel were largely responsible for a 37-percent decrease in shipments of molybdic oxide, calcium molybdate, and ferromolybdenum to domestic consumers in 1949. The smaller demand was also partly the result of unusually large purchases of molybdenum products made before the price increase effective January 1, 1949, according to the Bureau of Mines, United States Department of the Interior. Exports of molybdic oxide, calcium molybdate, and ferromolybdenum, however, were up 8 percent. Production of molybdic oxide, calcium molybdate, and ferromolybdenum declined 20 percent from 1948. Output and shipments of molybdenum metal and ammonium molybdate also declined, but production of sodium molybdate increased substantially and shipments were virtually the same in both years.

Production of molybdenum concentrates in 1949 declined 16 percent from 1948. As a consequence of the lessened demand for molybdenum products in 1949, the quantity of concentrates converted to oxide was 21 percent smaller than in 1948. However, exports of concentrates were 22 percent greater.

Prepared by Hubert W. Davis, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

Salient statistics of molybdenum concentrates in the United States, 1947-1949

	Molybdenum contained, pounds		
	1947	1948	1949
Production	27,047,000	26,706,000	22,530,000
Shipments from mines 1/	22,189,800	29,669,000	23,280,000
Exports (include molybdic oxide)	2,989,251	4,132,341	5,319,780
Imports for consumption	----------	----------	48,148
Consumption	20,221,000	25,156,000	19,960,000
Stocks (industry) Dec. 31 2/	23,660,500	21,205,800	19,159,100

1/ Comprises shipments to domestic and foreign consumers, plus concentrates converted to oxide at Miami, Ariz., and Langeloth, Pa.
2/ At mines and at plants making molybdenum products.

PART I - PRODUCTION, SHIPMENTS, CONSUMPTION, AND STOCKS OF MOLYBDENUM CONCENTRATES

The total production of molybdenum concentrates was 22,530,000 pounds (contained molybdenum) in 1949, a decrease of 16 percent from 1948. Molybdenum was produced in six States in 1949; Colorado led, followed in order by Utah, New Mexico, Arizona, California, and Nevada. Output of concentrates at mines operated solely or almost solely for molybdenum was 10,960,000 pounds in 1949, a decrease of 18 percent from 1948, whereas byproduct concentrates from copper and tungsten operations totaled 11,570,000 pounds, a decrease of 13 percent. Byproduct molybdenum represented 51 percent of the total concentrates produced in 1949 as compared with nearly 50 percent in 1948.

Shipments of molybdenum concentrates were 23,280,000 pounds (contained molybdenum) in 194 , a decrease of 22 percent from 1948. The shipments in 1949 comprised 18,993,000 pounds to domestic consumers and 4,287,000 pounds for export.

Consumption of molybdenum concentrates was 19,960,000 pounds (contained molybdenum) in 1949, a decrease of 21 percent from 1948.

Stocks of molybdenum concentrates held by industry were 19,159,100 pounds (contained molybdenum) on December 31, 1949, compared with 21,205,800 pounds at the end of 1948.

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PART II - PRODUCTION, SHIPMENTS, AND STOCKS OF MOLYBDENUM PRODUCTS

Production and shipments of molybdenum products were 19,624,200 and 16,333,100 pounds (contained molybdenum) in 1949, decreases of 20 and 35 percent, respectively, from 1948. Shipments of molybdenum products in 1949 comprised 15,019,000 pounds to domestic consumers and 1,314,100 pounds for export.

Stocks of molybdenum products held by producers were 10,837,900 pounds (contained molybdenum) on December 31, 1949, compared with 8,546,800 pounds at the end of 1948.

PART III - FOREIGN TRADE IN MOLYBDENUM

Imports. - Imports of molybdenum ore and concentrates into the United States were 48,148 pounds (contained molybdenum) in 1949.

Exports. - According to the U. S. Department of Commerce, 5,319,780 pounds (contained molybdenum) of molybdenum concentrates (including molybdic oxide) were exported from the United States in 1949 compared with 4,132,341 pounds in 1948. Taking 52 and 29 percent, respectively, the United Kingdom and France were the chief foreign markets in 1949; Sweden and Germany took 10 and 5 percent, respectively.

Exports of ferromolybdenum were 955,103 pounds (gross weight) in 1949 compared with 1,188,949 pounds in 1948, and those of molybdenum metal and alloys were 78,479 pounds compared with 56,303 pounds in 1948.

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MINERAL MARKET REPORT
M.M.S. NO. 1838

For immediate release

PRELIMINARY 1949 TOTALS FOR RECOVERY OF COPPER FROM COPPER-BASE SCRAP

Recovery of secondary copper at plants engaged in the remelting of scrap metal was substantially less in 1949 than in 1948 according to the Bureau of Mines, United States Department of the Interior. The decrease accompanied the general decline in industrial activity which characterized the first half 1949. An increased scale of operations in the later months of the year partially counterbalanced the drop in rate of output during the first half of 1949. Secondary production--production from scrap--dropped 26 percent whereas refinery production of new copper declined only 13 percent. The greater decline in secondary output can be attributed to the relative scarcity of scrap and to increased availability of refined copper. Wartime supplies of ammunition scrap had been largely reduced prior to 1949 thus causing consumers to curtail their consumption of scrap and turn to more readily obtainable refined metal to meet plant needs. Some plants prefer refined metal or brass ingot to scrap and use scrap only when the supply of ingot metal is inadequate.

The estimates for 1949 are based on monthly and quarterly reports from plants which produce about 85 percent of the copper recovered from scrap. Allowance for the remaining 15 percent, which are foundries and miscellaneous manufacturers canvassed annually and for which tabulations are incomplete, has been made. The data given in the table cover only copper produced from copper-base scrap; recovery of copper from alloys containing metals other than copper as the chief constituent constitute an additional quantity estimated not to exceed 2 percent of the total.

(over)

Prepared by Helena M. Meyer and Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Metal Economics Branch, Minerals Division.

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Estimate of copper recovered from purchased copper-base scrap in 1949, and comparable final figures for 1948, in short tons.

	From new scrap		From old scrap		Total Copper recovered	
	1948	1949	1948	1949	1948	1949
By brass ingot makers.......	64,688	47,000	221,388	147,000	286,076	194,000
By primary copper producers.	118,094	84,000	130,016	133,000	248,110	217,000
By brass mills..............	252,312	193,000	41,851	29,000	294,163	207,000
By foundries and miscellaneous manufacturers.......	23,798	15,000	107,617	60,000	131,415	90,000
Total	458,892	339,000	500,872	369,000	959,764	708,000

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MINERAL MARKET REPORT
MMS NO. 1839

PRODUCTION OF COKE AND COAL CHEMICALS FROM COAL-GAS RETORTS IN 1949

The downward trend in output of coke from coal-gas retorts in the United States continued in 1949 and production decreased 28 percent from 1948 according to reports received by the Bureau of Mines, United States Department of the Interior. The number of coal-gas plants are declining rapidly as gas utilities find it economically advantageous to convert their systems to the distribution of other kinds of gas such as water gas, liquefied petroleum gas, or natural gas. For this reason, 9 coal-gas plants discontinued operations in 1949 and at the end of the year only 21 were active. Of the 9 installations which closed, 7 were dismantled and 2 were to be maintained as standby equipment.

In the operation of a coal-gas plant, gas is the primary product and coke, tar, ammonia, and crude light oil are secondary. Data on production, consumption by producers, and sales of coke are summarized in table 1. These data are presented by States and regions, as far as possible without revealing individual operations, in tables 2 to 4. Less than half of the retort coke produced in 1949 was sold, principally for household heating. The larger proportion was used by the producers as follows: (1) for the manufacture of producer or water gas, (2) for heating the retorts (bench fuel), and (3) for raising steam under boilers at the gas works.

Crude tar is recovered at all coal-gas plants and, although the quantity produced is very small compared to that produced at oven-coke plants, the average yield is considerably higher. In 1949, the yield of tar at coal-gas plants was 14.03 gallons per ton of coal carbonized as compared with an estimated yield of 8 gallons at oven-coke plants. Nearly all of the coal-gas tar is sold to tar distillers for refining into tar products and only one coal-gas plant "topped", or partially refined, its tar in 1949. Crude light oil, including drip oil, was recovered at 4 plants in 1949 and data on production and sales are shown in table 1. Ammonia was produced at only one installation and figures cannot be disclosed.

Bituminous coal is the only raw material used in the manufacture of coal gas. Therefore, the delivered price of coal to the gas plants determines the cost of producing the gas. Mining and transportation costs have risen steadily in recent years which, in turn, have increased coal costs. The average cost per ton of coal at coal-gas plants in 1949 was 3 percent higher than in 1948 and 77 percent higher than in 1943.

A directory, showing names and addresses of coal-gas plants in existence on December 31, 1949, can be obtained on request to the Anthracite and Coke Section, Coal Economics Branch, Bureau of Mines, Washington 25, D. C.

Prepared by Maxine M. Otero, J. A. DeCarlo, and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Fuels and Explosives Division.

TABLE 1. - SALIENT STATISTICS OF THE COAL-GAS INDUSTRY IN THE UNITED STATES IN 1949

	Horizontal retorts	Vertical retorts	Total
Coke produced:			
Net tons	111,230	268,191	379,421
Value	$1,409,470	$2,982,837	$4,392,307
Screenings or breeze produced ... net tons	15,228	43,168	58,396
Coal charged into retorts:			
Net tons	172,224	450,986	623,210
Value	$1,933,764	$4,884,292	$6,818,056
Average per ton	$11.23	$10.83	$10.94
Average yield in percent of coal charged:			
Coke	64.58	59.47	60.88
Breeze (at plants actually recovering)	9.36	10.39	10.10
Retorts:			
In existence December 31	586	272	858
In operation December 31	329	208	537
Annual coal capacity ... net tons	246,000	537,700	783,700
Coke used by producer -			
For manufacture of producer or water gas:			
Net tons	29,586	100,921	130,507
Value	$380,590	$1,023,151	$1,403,741
For bench fuel:			
Net tons	26,951	51,491	78,442
Value	$303,819	$569,209	$873,028
For other purposes:			
Net tons	6,326	7,096	13,422
Value	$79,277	$68,706	$147,983
Coke sold to other consumers -			
For manufacture of water gas:			
Net tons	7,911	68	7,979
Value	$82,928	$1,441	$84,369
For other industrial use:			
Net tons	....	5,602	5,602
Value	....	$64,618	$64,618
For domestic use:			
Net tons	33,976	92,679	126,655
Value	$468,737	$1,112,701	$1,581,438
Stocks on January 1, 1950:			
Coke ... net tons	10,221	47,609	57,830
Breeze ... do	3,183	1,439	4,622
Coal chemical materials:			
Tar:			
Production ... gallons	2,146,775	6,599,539	8,746,314
Sales -			
For refining:			
Gallons	1,222,587	4,720,515	5,943,102
Value	$81,251	$362,811	$444,062
For other purposes:			
Gallons	1,023,809	2,620,227	3,644,036
Value	$73,151	$196,791	$269,942
Stocks on January 1, 1950 ... gallons	355,926	918,363	1,274,289
Per ton of coal charged ... do	12.47	14.63	14.03
Crude light oil: a/			
Production ... do	22,747	196,161	218,908
Sales ... do	27,109	204,920	232,029
Value of sales	$2,169	$16,311	$18,480
Stocks on January 1, 1950 ... gallons	7,200	28,727	35,927
Per ton of coal charged ... do	0.89	1.43	1.35

a/ Includes drip oil.

TABLE 2. - NUMBER OF RETORTS, COAL CHARGED, COKE PRODUCED, VALUE, AND STOCKS AT COAL-GAS PLANTS IN THE UNITED STATES IN 1949, BY STATES

	Active plants	Retorts end of year		Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke		On hand December 31 (net tons)
		In existence	In operation				Total	Per ton	
Alabama, North and South Carolina, and Virginia	6	248	176	85,026	61.59	52,368	$519,283	$9.92	2,752
Colorado, Indiana, Iowa, Minnesota, and North Dakota	6	87	64	46,411	60.29	27,980	373,049	13.33	6,047
Connecticut, Maine, New Jersey New York, and Rhode Island .	6	88	36	45,873	62.78	28,799	346,169	12.02	6,346
Massachusetts	8	320	160	280,958	58.89	165,468	1,998,644	12.08	38,671
Michigan and Wisconsin	4	115	101	164,942	63.54	104,806	1,155,162	11.02	4,014
	30	858	537	623,210	60.88	379,421	4,392,307	11.58	57,830

TABLE 3. - COAL CHARGED AND COKE PRODUCED AT COAL-GAS PLANTS IN THE UNITED STATES, 1946-49, BY GEOGRAPHICAL REGIONS, IN NET TONS

Region	1946		1947		1948		1949	
	Coal charged	Coke produced	Coal charged	Coke produced	Coal charged	Coke produced	Coal charged	Coke produced
New England	543,627	312,598	494,456	277,342	484,161	269,541	326,831	194,267
Middle Atlantic	177,778	116,762	141,197	94,428	49,911	31,177	(a)	(a)
Ohio	(b)	(b)	(b)	(b)	(b)	(b)	....	....
Michigan	56,342	38,214	39,926	26,149	(c)	(c)	(c)	(c)
Illinois-Indiana	29,521	18,217	26,951	16,691	24,455	15,792	....	....
Missouri Valley	(b)	(b)	(b)	(b)	(b)	(b)	(c)	(c)
Lake Dock	276,493	175,960	253,453	162,234	235,229	148,997	209,008	131,255
Southeast	124,404	75,609	122,882	78,152	103,422	63,867	87,371	53,899
Southwest, Mountain, and Pacific	31,950	15,975	15,955	9,580	(b)	(b)	(d)	(d)
	1,240,115	753,335	1,094,820	664,576	897,178	529,374	623,210	379,421

a/ Included with New England.
b/ Included with Illinois-Indiana.
c/ Included with Lake Dock.
d/ Included with Southeast.

TABLE 4. - RETORT COKE USED BY PRODUCER IN THE UNITED STATES AND SOLD IN 1949, BY STATES

State	Used by producer -					
	To make producer or water gas		For bench fuel		For other purposes	
	Net tons	Value	Net tons	Value	Net tons	Value
Alabama, North and South Carolina, and Virginia	15,005	$142,110	16,905	$155,195	5,228	$48,229
Colorado, Iowa, Minnesota, and North Dakota	3,946	55,732	8,066	109,801	1,903	22,375
Connecticut, Maine, New Jersey, New York, and Rhode Island	10,702	121,995	8,866	103,551	467	5,150
Massachusetts	68,359	815,711	42,184	478,388	5,703	70,943
Michigan and Wisconsin	32,495	268,193	2,421	26,093	121	1,286
	130,507	1,403,741	78,442	873,028	13,422	147,983

State	Sold -					
	For manufacture of water gas		For other industrial use		For domestic use	
	Net tons	Value	Net tons	Value	Net tons	Value
Alabama, North and South Carolina, and Virginia	6,070	$61,461	....	....	9,807	$118,023
Colorado, Iowa, Minnesota, and North Dakota	....	....	....	....	13,901	184,294
Connecticut, Maine, New Jersey, New York, and Rhode Island	1,909	22,908	....	....	1,639	22,850
Massachusetts	....	....	867	$8,328	38,147	476,260
Michigan and Wisconsin	....	....	4,735	56,290	63,161	780,011
	7,979	84,369	5,602	64,618	126,655	1,581,438

TABLE 5. - PRODUCTION, SALES, AND STOCKS OF CRUDE COAL TAR AT COAL-GAS PLANTS IN THE UNITED STATES IN 1949, BY STATES

State	Produced (gallons)		Sold			On hand December 31 (gallons)
	Total	Per ton of coal charged	Gallons	Value		
				Total	Per gallon	
Alabama, North and South Carolina, and Virginia ...	1,226,582	14.43	1,141,927	$83,084	$.073	236,461
Colorado, Iowa, Minnesota, and North Dakota	742,295	15.99	738,860	40,758	.055	71,266
Connecticut, Maine, New Jersey, New York, and Rhode Island	601,091	13.10	966,241	74,134	.077	1,625
Massachusetts	3,827,423	13.62	4,352,602	322,661	.074	805,740
Michigan and Wisconsin	2,348,923	14.24	2,387,508	193,367	.081	159,197
	8,746,314	14.03	9,587,138	714,004	.074	1,274,289

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MINERAL MARKET REPORTS
M. M. S. No. 1840

FLUORSPAR INDUSTRY IN THE UNITED STATES IN 1949

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

Shipments of fluorspar from mines in the United States, which established a peacetime record in 1948, declined 29 percent in 1949, and imports, which reached an all-time high in 1948, dropped 14 percent, according to the Bureau of Mines, United States Department of the Interior. Domestic shipments in 1949 were the smallest since 1940 but imports have been exceeded by only two other years. Production of finished fluorspar also declined substantially in 1949. The smaller demand for fluorspar in 1949 was caused by a 15-percent decline in consumption, which resulted chiefly from the strike in the steel industry and to lower level of operations in the hydrofluoric acid and glass industries, and partly to an 11-percent reduction in consumers' inventory.

Production of finished fluorspar was 236,400 short tons (including 111,247 tons of flotation concentrates) in 1949 compared with 336,000 tons in 1948.

Shipments of fluorspar of domestic origin from mines were 236,704 short tons in 1949 compared with 331,749 tons in 1948. In 1949, 3,478 tons of Mexican fluorspar were purchased by Kentucky producers, who blended it with domestic fluorspar. This Mexican fluorspar is not included in the shipments from mines but is included in the import statistics. Illinois maintained its rank as the premier producer of fluorspar in 1949 by supplying 51 percent of the total domestic shipments. However, shipments from Illinois were 30 percent less than in 1948 and the smallest since 1940. Montana and Texas were the only States to show gains in shipments in 1949. Shipments from Illinois and Kentucky were 28 percent less in 1949 than in 1948 compared with a loss of 29 percent from other producing States. Shipments of fluorspar by river or river-rail were 53,243 tons in 1949 compared with 71,696 tons in 1948.

Stocks of fluorspar at mines at the close of 1949 totaled 121,516 short tons (100,286 tons in 1948) and comprised 37,039 tons of finished fluorspar and 84,477 tons of crude fluorspar (calculated to be equivalent to 36,000 tons of finished fluorspar).

Consumption of fluorspar was 345,221 short tons in 1949 compared with 406,269 tons in 1948. The steel industry continued to be the predominant user of fluorspar and absorbed proportionately more (58 percent) of the total consumed in 1949 than in 1948 (57 percent). However, usage of fluorspar by the steel industry was 13 percent less than in 1948. The average consumption

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Prepared by Hubert W. Davis, under the supervision of Robert H. Ridgway, Chief, Ferrous Metals and Alloys Branch, Minerals Division.

of fluorspar per long ton of basic open-hearth steel produced was 5.85 pounds in 1949 compared with 5.86 pounds in 1948. The hydrofluoric-acid industry, the second-largest utilizer of fluorspar, consumed 17 percent less than in 1948 and accounted for 25.8 percent of the total in 1949 compared with 26.4 percent in 1948. Consumption of fluorspar by the glass and enamel trades in 1949 declined for the second consecutive year and was 21 percent smaller than in 1948.

Fluorspar was reported consumed in 39 States and the District of Columbia in 1949, but 3 States - Illinois, Ohio, and Pennsylvania - used 182,969 tons or 53 percent of the total consumption. Pennsylvania was again the chief consuming State; it ranked first in consumption in both steel and glass and sixth in hydrofluoric acid. Illinois continued to rank first as a consumer of fluorspar in hydrofluoric acid.

Fluorspar imported for consumption in the United States was 95,619 short tons in 1949 compared with 111,626 tons in 1948. For the ninth consecutive year Mexico has continued to be the largest source of foreign fluorspar to the United States, and in 1949 it supplied 61 percent of the total imports. However, imports from Mexico were 27 percent smaller than in 1948. Substantially larger imports were received from Italy and Spain. For the first time since 1940, fluorspar was received from France.

The following tables show details of shipments, consumption, and imports of fluorspar in 1948 and 1949.

Fluorspar of domestic origin shipped from mines in the United States, 1948-49, by States

State	1948			1949		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Colorado...	27,698	$831,218	$30.01	22,324	$763,296	$34.19
Illinois...	172,561	6,322,246	36.64	120,881	4,621,733	38.23
Kentucky...	84,889	2,663,377	31.37	63,438	2,018,209	31.81
New Mexico.	24,968	911,682	36.51	12,844	446,086	34.73
Arizona....	1,271	498,929	23.06	846	417,430	24.25
Nevada.....	9,615			5,847		
Texas......	906			1,770		
Utah.......	9,523			8,332		
Montana....	318			422		
	331,749	11,227,452	33.84	236,704	8,266,754	34.92

Fluorspar of domestic origin shipped from mines in the United States, 1948-49, by uses

Use	1948			1949		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Steel	170,633	$5,058,866	$29.65	119,264	$3,555,743	$29.81
Iron foundry	6,667	220,512	33.08	3,103	103,061	33.21
Glass	35,960	1,294,211	35.99	27,727	1,043,512	37.64
Enamel	9,415	362,111	38.46	4,625	186,312	40.28
Hydrofluoric acid	96,848	3,852,678	39.78	70,759	2,991,166	42.27
Miscellaneous	11,582	414,255	35.77	10,443	354,439	33.94
Exported	644	24,819	38.54	783	32,521	41.53
	331,749	11,227,452	33.84	236,704	8,266,754	34.92

Fluorspar of domestic origin shipped from mines in the United States, 1948-49, by grades and industries, in short tons

Grade and industry	1948	1949
Fluxing gravel and foundry lump:		
Ferrous	1/167,733	1/115,242
Nonferrous	1,286	789
Cement	950	572
Miscellaneous	4,780	4,560
	1/174,749	1/121,163
Ground and flotation concentrates:		
Ferrous 2/	1/ 11,714	1/ 9,494
Nonferrous	2/ 1,093	1,248
Glass and enamel	45,375	32,352
Hydrofluoric acid	96,848	70,759
Miscellaneous	1,325	904
Exported	644	783
	1/156,999	1/115,540
Acid lump:		
Nonferrous	1	1
Total:		
Ferrous	179,447	124,736
Nonferrous	2,380	2,038
Cement	950	572
Glass and enamel	45,375	32,352
Hydrofluoric acid	96,848	70,759
Miscellaneous	6,105	5,464
Exported	644	783
	331,749	236,704

1/ Fluxing gravel includes (and flotation concentrates exclude) the following quantities of flotation concentrates blended with fluxing gravel: 1948, 16,666 tons; 1949, 6,948 tons.

2/ Includes pelletized gravel.

Fluorspar (domestic and foreign) consumed in the United States, 1946-47, by States, in short tons

State	1946	1947	State	1946	1947
Alabama	7,101	10,076	Kentucky	5,858	6,179
Georgia			Maryland		
Arkansas	16,491	21,740	Maine	1,346	1,441
Louisiana			Massachusetts		
Mississippi			Rhode Island		
North Carolina			Michigan	8,052	10,545
Florida	------		Minnesota	1,632	2,888
South Carolina	------		Wisconsin		
California	6,755	9,185	Missouri	2,197	3,935
Colorado	8,184	14,161	New York	12,625	12,823
Iowa			Ohio	46,493	62,871
Utah			Oklahoma	805	1,445
Connecticut	420	549	Oregon	1,501	1,966
Delaware	25,361	27,535	Washington		
District of Columbia			Pennsylvania	70,661	84,949
New Jersey			Tennessee	1,856	1,257
Illinois	49,311	59,646	Texas	4,572	9,736
Indiana	26,435	27,916	Virginia	94	132
Kansas	166	82	West Virginia	5,274	5,081
Nebraska				303,190	376,138
South Dakota					
Wyoming		------			

Fluorspar imported into the United States in 1947, by countries
(Source: U. S. Department of Commerce)

Country	Containing more than 97 percent calcium fluoride		Containing not more than 97 percent calcium fluoride		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
Canada	------	-------	284	$7,594	284	$7,594
Italy	------	-------	4,126	40,793	4,126	40,793
Mexico	7,090	$130,662	44,529	641,271	51,619	771,933
Newfoundland	8,257	206,360	2,050	68,716	10,307	275,076
Spain	275	9,277	11,767	149,557	12,042	158,834
United Kingdom	1	169	------	-------	1	169
	15,623	346,468	62,756	907,931	78,379	1,254,399

Imported fluorspar delivered to consumers in the United States, 1946-47, by uses

Use	1946			1947		
	Short tons	Selling price at tidewater, border, or f.o.b. mill in the United States, including duty		Short tons	Selling price at tidewater, border, or f.o.b. mill in the United States, including duty	
		Total	Average		Total	Average
Steel	20,319	$485,592	$23.90	64,797	$1,665,629	$25.71
Hydrofluoric acid	5,143	163,659	31.82	12,346	506,497	41.03
Ferro-alloys	309	10,700	34.63	229	7,900	34.50
Glass and enamel	106	3,384	31.92	495	21,902	44.25
Other	186	4,238	22.78	403	13,377	33.19
	26,063	667,573	25.61	78,270	2,215,305	28.30

Fluorspar (domestic and foreign) consumed and in stock in the United States, 1948-49, by industries, in short tons

Industry	1948			1949		
	Consumption	Stocks at consumers' plants Dec. 31	In transit to consumers' plants Dec. 31	Consumption	Stocks at consumers' plants Dec. 31	In transit to consumers' plants Dec. 31
Basic open-hearth steel	207,342	111,260	8,589	183,045	100,591	3,948
Electric-furnace steel	25,241			18,278		
Bessemer steel	104			178		
Iron foundry..	6,209	2,161	5	4,956	1,745	63
Ferro-alloys..	2,608	801	------	2,860	808	-----
Hydrofluoric acid 1/......	107,280	19,530	297	89,152	17,138	149
Primary aluminum 2/..	1,156	605	------	950	813	-----
Primary magnesium....						
Glass.........	37,247	6,734	759	30,797	5,553	879
Enamel........	8,871	1,987	373	5,510	1,277	65
Cement........	1,078	1,152	------	848	875	-----
Miscellaneous.	9,133	2,639	111	8,647	1,821	72
	406,269	146,869	10,134	345,221	130,621	5,176

1/ Fluorspar used in making artificial cryolite and aluminum fluoride (aluminum raw materials) is included in the figures for hydrofluoric acid, which is an intermediate in their manufacture.

2/ Figures on consumption represent fluorspar used as a flux; see footnote 1.

Fluorspar (domestic and foreign) consumed in the United States, 1948-49, by States, in short tons

State	1948	1949
Alabama	12,435	10,517
Georgia		
Arkansas	17,269	22,457
Louisiana		
Mississippi		
North Carolina		
South Carolina		
Florida		------
California	10,612	10,050
Colorado	15,308	14,578
Iowa		
Utah		
Connecticut	950	662
Delaware	26,984	24,380
District of Columbia		
New Jersey		
Illinois	63,304	54,452
Indiana	30,077	24,250
Kansas	272	265
Nebraska		
South Dakota		
Wyoming		
Kentucky	7,483	11,401
Maryland		
Maine	1,503	1,188
Massachusetts		
Rhode Island		
Michigan	9,994	10,191
Minnesota	3,870	3,918
Wisconsin		
Missouri	4,041	2,790
New York	14,588	12,808
Ohio	67,725	56,451
Oklahoma	900	1,048
Oregon	2,358	1,965
Washington		
Pennsylvania	97,664	72,066
Tennessee	1,084	389
Texas	12,387	5,295
Virginia	61	78
West Virginia	5,400	4,022
	406,269	345,221

Fluorspar imported for consumption in the United States in 1949, by countries (Source: U. S. Department of Commerce)

Country	Containing more than 97 percent calcium fluoride		Containing not more than 97 percent calcium fluoride		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
France	------	-------	1,532	$27,800	1,532	$27,800
Italy	2,239	$71,631	5,618	58,731	7,857	130,362
Mexico	2,907	59,880	55,331	769,021	58,238	828,901
Newfoundland	15,344	361,623	------	-------	15,344	361,623
Spain	------	-------	12,648	200,358	12,648	200,358
Total: 1949	20,490	493,134	75,129	1,055,910	95,619	1,549,044
1948	20,196	531,300	91,430	1,293,794	111,626	1,825,094

Imported fluorspar delivered to consumers in the United States, 1948-49, by uses

Use	1948			1949		
	Short tons	Selling price at tidewater, border, or f.o.b. mill in the United States, including duty		Short tons	Selling price at tidewater, border, or f.o.b. mill in the United States, including duty	
		Total	Average		Total	Average
Steel........	98,671	$2,458,384	$24.91	68,783	$1,667,252	$24.24
Hydrofluoric acid.......	10,009	468,861	46.84	16,020	735,182	45.89
Ferro-alloys.	265	6,201	23.40	278	6,011	21.62
Glass and enamel.....	227	11,478	50.56	2,130	102,042	47.91
Other........	2,059	69,033	33.53	2,648	69,040	26.07
	111,231	3,013,957	27.10	89,859	2,579,527	28.71

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April 1950

Mineral Market Report
M. M. S. No. 1841

DIRECTORY OF PEAT PRODUCERS IN THE UNITED STATES WHO REPORTED PRODUCTION OR SALES IN 1949

State and County	Producer	Mailing Address
CALIFORNIA:		
Contra Costa	California Peat Company	P. O. Box K Antioch, California
San Diego	Growers Peat Humus Company	P. O. Box 486 Oceanside, California
Orange	Peat Sales Company	17581 Gothard Road Huntington Beach, Calif.
Orange	R. W. McClellan & Sons	151 Commercial Way Costa Mesa, California
COLORADO:		
Boulder	McCoy and Jensen	Mt. Morrison, Colorado
CONNECTICUT:		
Hartford	Peat Humus Associates, Inc.	884 Neipsic Road Glastonbury, Connecticut
Middlesex	Saybrook Peat Company	Old Saybrook, Connecticut
Hartford	Shaler Humus Company	352 Woodland Street Manchester, Connecticut
FLORIDA:		
Orange	Daetwyler Peat Mine	Rt. 1, Box 50 Orlando, Florida
Lake	Florida Nursery & Landscape Co.	Box 97, Leesburg, Florida
Putnam	Glen Saint Mary Nurseries Co.	Glen Saint Mary, Fla.
Bay	West Florida Humus Company	Panama City, Florida

DIRECTORY OF PEAT PRODUCERS IN THE UNITED STATES WHO REPORTED PRODUCTION OR SALES IN 1949 (Cont'd)

State and County	Producer	Mailing Address
GEORGIA:		
Lowndes	Georgia Peat Moss Company, Inc.	Canton, Ohio
ILLINOIS:		
Tazewell	Manito Filler Company	806 Lehmann Building Peoria 2, Illinois
INDIANA:		
Wells	Ballard Peat Company	Route 2 Warren, Indiana
Kosciusko	Sam Dausman	Leesburg, Indiana
Grant	Glacier Peat Moss Company	Route 1 Jonesboro, Indiana
Wells	William Graves	Montpelier, Indiana
DeKalb	Humus Peat Moss Company	Route 1 Corunna, Indiana
Blackford	Knecht Peat & Gravel Company	Route 1 Hartford City, Indiana
La Porte	Fred Von Ammon	Route 3 La Porte, Indiana
IOWA:		
Worth	Colby Pioneer Peat Company	Hanlontown, Iowa
Pottawattamie	Victor H. Green	Route 1 Council Bluffs, Iowa
MAINE:		
Washington	Domestic Peat Company	Blue Hill, Maine
Hancock	The Richland Peat Mines, Incorporated	198 Lisbon Street Lewiston, Maine
MASSACHUSETTS:		
Berkshire	Hinsdale Leafmold Company	10 Taconic Street Pittsfield, Mass.
Middlesex	F. P. McGuinness	21 Parker Terrace Newton Centre, Mass.
Hampden	Roselli Brothers Farms	92 Southampton Road Westfield, Mass.

DIRECTORY OF PEAT PRODUCERS IN THE UNITED STATES WHO REPORTED PRODUCTION OR SALES IN 1949 (Cont'd)

State and County	Producer	Mailing Address
MICHIGAN:		
Lapeer	Michigan Peat, Inc.	267 Fifth Avenue New York, New York
MINNESOTA:		
Hennepin	Nutria Peat Sales Company	2406 East Hennepin Avenue Minneapolis 13, Minnesota
St. Louis	Peat Processing Company	Box B Floodwood, Minnesota
NEW HAMPSHIRE:		
Belknap	David Perkins	Center Barnstead, New Hampshire
NEW JERSEY:		
Sussex	Hyper-Humus Company	Lafayette Newton, New Jersey
Sussex	Netcong Natural Products Company	Netcong, New Jersey
Cumberland	Standard Peat Company	Sixth and Florence Avenue Millville, New Jersey
OHIO:		
Mahoning	Beaver Peat Products Company	Damascus, Ohio
Summit	H. W. Codding & Sons	Box 107 Copley, Ohio
Huron	Mel-lo Peat Company	Box 195 Willard, Ohio
Summit	The Northfield Peat Humus Co.	Northfield, Ohio
Stark	Oakridge Farms	Route 2 North Canton, Ohio
Seneca	Organic Products Company	P. O. Box 1379 Columbus 16, Ohio
PENNSYLVANIA:		
Lawrence	D. M. Boyd	Box 134 New Wilmington, Pa.
Mercer	Arthur Minshull	Route 2 Jackson Center, Pa.
Lawrence	Moore's Peat Humus Company	New Wilmington, Pa.

DIRECTORY OF PEAT PRODUCERS IN THE UNITED STATES WHO REPORTED PRODUCTION OR SALES IN 1949 (Cont'd)

State and County	Producer	Mailing Address
TEXAS:		
Lee	Lone Star Peat Company	Lexington, Texas
WASHINGTON:		
Snohomish	Peter Jensen	Box 275, Route 5 Arlington, Washington
Kitsap	Puget Sound Peat Moss, Inc.	Star Route 1, Box 14 Bremerton, Washington
WISCONSIN:		
Outagamie	Blondey & Blondey	New London, Wisconsin
Waukesha	Tardif Domestic Peat Sales Co.	317 E. Newhall Avenue Waukesha, Wisconsin

Prepared by Golden V. Chiriaco, Anthracite and Coke Section, Coal Economics Branch

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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MINERAL MARKET REPORT
M. M. S. NO. 1842

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PEAT IN THE UNITED STATES IN 1949

PRODUCTION

Peat production in the United States dropped slightly in 1949 (less than one percent) when a total of 129,532 short tons, valued at $1,020,014, was reported to the Bureau of Mines, as compared with 129,581 tons, valued at $929,560, recorded for 1948.

Forty-eight producers operating in 19 States accounted for the 1949 production of 129,532 tons. Nine plants that produced peat in 1948 were inactive in 1949; only one plant, however, was reported permanently abandoned.

The average value per ton in 1949 was $7.87, a 9.8 percent increase over the 1948 value of $7.17. Production and value for 1947-49 are shown in the following table:

Table 1.--Peat produced in the United States, 1947-49
(In short tons)

Year	Production	Value	
		Total	Average per ton
1947 ----------	136,232	868,979	$ 6.38
1948 ----------	129,581	929,560	7.17
1949 ----------	129,532	1,020,014	7.87

New Jersey was the largest peat-producing State in 1949, followed, in order of output, by Ohio, Minnesota, Florida, Michigan, Indiana, Illinois, Pennsylvania, Connecticut, California, Maine, Colorado, Wisconsin, Iowa, Georgia, Texas, Washington, Massachusetts, and New Hampshire.

Peat humus, produced in 14 States, comprised about 60 percent of the total production in 1949; reed or sedge, produced in 12 States, about 32 percent; and moss peat and other, produced in 7 States, about 8 percent.

Prepared by Golden V. Chiriaco, under the supervision of J. A. Corgan, Chief, Anthracite and Coke Section, Coal Economics Branch, Fuels & Explosives Division.

The following table shows production, by kinds, for 1949:

Table 2.--Peat Production in the United States, by kinds, 1949
(in short tons)

Kind	Quantity	Value	Average value
Moss peat -----------	10,150	$ 149,531	$ 14.73
Reed or sedge -------	40,945	260,939	6.37
Peat humus ----------	78,036	608,626	7.80
Other ---------------	401	918	2.29
Total ------------	129,532	$ 1,020,014	$ 7.87

USES

In 1949, as in preceding years, peat was used in this country primarily for soil improvement. Of the total sales reported for 1949, 59 percent was for soil improvement; 32 percent, for mixed fertilizers; and 9 percent, for other purposes, including litter for poultry yards, for golf greens, in nurseries and greenhouses, for landscape plantings, etc.

United States Government Specifications.--The Federal Government purchases a certain amount of peat, provided the peat meets required specifications. These specifications may be obtained from the Federal Supply Service, General Services Administration, Washington 25, D. C.

Table 3 shows sales of peat, by uses, for the years 1947-49:

Table 3.--Peat Sales, by Uses, 1947-49
(in short tons)

Year	Mixed Fertilizers		Soil Improvement		Other Uses		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1947	28,354	266,359	105,796	584,012	1,561	17,593	135,711	867,964
1948	36,012	309,259	86,991	578,615	6,000	36,000	129,003	923,874
1949	40,897	385,015	76,963	546,062	11,672	89,237	129,532	1,020,314

IMPORTS

Imports of moss peat continued to rise, totaling 94,747 short tons in 1949, an increase of about 21 percent over the 1939 prewar figure of 78,611 tons, and 4 percent more than the quantity imported in 1948 (91,073 short tons). No exports of peat were reported, consequently, the quantity available for domestic consumption in 1949 totaled 224,279 tons.

Table 4.--Imports of Moss Peat into the United States, by Kinds and by Countries, in 1949 (in short tons) 1/

Country	Poultry & Stable Grade		Fertilizer Grade		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
Belgium and Luxembourg-	--	--	55	710	55	710
Canada-------	25,473	890,230	48,162	1,651,913	73,635	2,542,143
Denmark------	32	838	1,145	31,909	1,177	32,747
Germany------	1,646	43,177	5,306	136,045	6,952	179,222
Ireland------	379	17,160	2,271	89,398	2,650	106,558
Netherlands--	474	12,622	5,894	154,593	6,368	167,215
Norway-------	--	--	2	51	2	51
Poland and Danzig-----	122	3,900	2,735	106,351	2,857	110,251
Sweden-------	16	464	367	17,541	383	18,005
United Kingdom	55	2,560	613	24,947	668	27,507
Total	28,197	970,951	66,550	2,213,458	94,747	3,184,409

1/ Compiled from records of the U. S. Department of Commerce.

WORLD PRODUCTION

Data on world production of peat will be published in the preprint chapter of the Minerals Yearbook.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORTS
M. M. S. No. 1843

MAY 1950
UNIVERSITY OF ILLINOIS

PLATINUM-GROUP METALS IN 1949

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

The demand for platinum in 1949 continued a downward trend that has persisted for four consecutive years and the retail price dropped from $96 an ounce to $72, according to the Bureau of Mines, United States Department of the Interior. Demand for palladium was also at a much lower level and the decline more pronounced than for platinum; however, the price remained static at $24 an ounce. Demand for iridium, osmium, and rhodium was likewise smaller but that of ruthenium was slightly larger. Throughout 1949 the quotations on rhodium and osmium remained at $125 and $100 an ounce, respectively, the price of iridium declined $10 an ounce to $100-$105, but that of ruthenium dropped $24 an ounce to $72. Imports of refined platinum in 1949 declined 8 percent from 1948 but those of palladium were 38 percent less. Receipts of palladium from the U.S.S.R.--the chief source of the 1948 imports--were conspicuous by their absence in 1949. Imports of iridium and osmium dropped substantially in 1949 but receipts of rhodium and ruthenium were up appreciably.

Refining of platinum in the United States in 1949 was at a rate 9 percent lower than in 1948 and 50 percent below the substantially smaller demand. The refined-metal deficiency was met by imports of 95,370 ounces, chiefly from Canada (66,583 ounces) and United Kingdom (14,144 ounces). The jewelry trade was by far the largest outlet for platinum in 1949, taking 48 percent of the total sold to domestic and foreign consumers. Sales to the jewelry and dental industries were virtually the same in 1949 as in 1948. However, much less platinum was sold to the chemical and electrical industries.

Refining of palladium in the United States was at a much higher rate in 1949 than in 1948. The quantity refined in 1949, however, was 68 percent less than demand, which was 26 percent smaller than in 1948. The deficit in palladium was met partly by imports of 73,770 ounces of refined metal, chiefly from Canada (53,761 ounces), Switzerland (8,720 ounces), and United Kingdom (6,799 ounces) and partly by withdrawals from stocks of refiners and dealers. The much smaller sales of palladium to the chemical and electrical industries in 1949 were partly offset by moderately greater sales to the dental and jewelry trades and for export.

PRODUCTION

Refining of new platinum-group metals in 1949 was 31 percent more than in 1948. Of the new metals recovered in 1949, 58 percent was chiefly from crude from Colombia, 27 percent was from domestic crude (chiefly from Alaska), and 15 percent was a byproduct of domestic gold and copper ores.

1/ Prepared by Hubert W. Davis and Charlotte R. Buck, under the supervision of Charles White Merrill, Acting Chief, Rare and Precious Metals Branch, Minerals Division.

New platinum-group metals recovered by refiners in the United States in 1949, by sources, in troy ounces

	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
Domestic from -							
Crude platinum..	12,564	92	1,286	238	144	12	14,336
Gold and copper refining......	1,844	5,794	-	-	-	-	7,638
	14,408	5,886	1,286	238	144	12	21,974
Foreign from crude platinum........	27,820	122	845	742	64	359	29,952
Total recovery:							
1949............	42,228	6,008	2,131	980	208	371	51,926
1948............	33,520	4,408	1,009	349	156	149	39,591

Secondary platinum-group metals recovered in 1949 comprised 41,734 ounces of platinum, 37,209 ounces of palladium, 1,101 ounces of iridium, 555 ounces of osmium, 569 ounces of rhodium, and 2,279 ounces of ruthenium--a total of 83,447 ounces. Comparable figures for 1948 are as follows: Platinum, 58,527 ounces; palladium, 28,418 ounces; iridium, 2,214 ounces; osmium, 1,031 ounces; rhodium, 882 ounces; and ruthenium, 2,829 ounces--a total of 93,901 ounces. Substantial quantities of worn-out catalysts, spinnerets, laboratory ware, and other products are returned by consumers to refiners for refining. The refined platinum metals recovered from these products (or their equivalent in refined metals) are returned to the consumers. The platinum metals so recovered are not included in the figures of secondary metals.

FOREIGN TRADE

(Figures on imports and exports from records of the U. S. Department of Commerce)

Imports. - Imports of platinum-group metals into the United States were 20 percent less than in 1948 and the smallest since 1940. The principal sources of the imported platinum-group metals were Canada (130,403 ounces), Colombia (26,335 ounces), United Kingdom (24,734 ounces), and Switzerland (15,099 ounces).

Platinum metals (unmanufactured) imported for consumption in the United States, 1948-49, in troy ounces

Material	1948	1949[1]
Unrefined materials:		
Ores and concentrates of platinum metals	1,893	505
Grains and nuggets (including crude, dust and residues)	27,630	27,603
Sponge and scrap	3,474	2,567
Osmiridium	657	2,637
	33,654	33,312
Refined metals:		
Platinum	103,939	95,370
Palladium	119,949	73,770
Iridium	5,472	4,221
Osmium	1,338	220
Rhodium	5,864	7,615
Ruthenium	2,740	3,640
	239,302	184,836
	272,956	218,148

[1] Preliminary and subject to revision.

Exports. - Exports of platinum were 18,150 ounces in 1949 (15,471 ounces in 1948), and those of the other platinum-group metals were 22,628 ounces (20,994 ounces in 1948).

SALES

Sales of platinum-group metals to consumers in the United States were 289,315 ounces in 1949, a decline of 21 percent from 1948.

Platinum continued to be the most widely used metal of the group and in 1949 sales were 23 percent greater than those of palladium. Sales of platinum constituted 153,265 ounces (53 percent) of the total platinum-group metals sold to domestic consumers in 1949. The jewelry trade was again the chief buyer of platinum, taking 53 percent of the total sold to domestic consumers, and its purchases were virtually the same in 1949 as in 1948. Sales of platinum to the electrical industry declined 32 percent and as a consequence it dropped to third place in 1949. The chemical industry ascended to second place as a buyer of platinum in 1949, although its purchases were down 23 percent. Sales of platinum to the dental trade were virtually the same in 1949 as in 1948 but sales for exports were smaller.

Sales of palladium to domestic consumers in 1949 were 31 percent smaller than in 1948; they constituted 116,224 ounces (40 percent) of the total platinum-group metals sold to consumers in the United States in 1949. The electrical industry retained first place as a buyer of palladium in 1949 by taking 54,275 ounces (47 percent) of the total palladium sold to domestic consumers. However, sales to the electrical industry were 48 percent less than in 1948, which however was the all-time high. Less palladium was also sold to the chemical industry but sales to the dental industry and for export were greater. Sales to the jewelry trade were virutally the same in 1949 as in 1948.

Sales of the other platinum-group metals--iridium, osmium, rhodium, and ruthenium--were comparatively small; they made up 7 percent of the total platinum-group metals sold in 1949. Demand for iridium, osmium, and rhodium was smaller but that of ruthenium was slightly larger.

The following table shows sales of platinum-group metals to consumers in the United States in 1948 and 1949.

Platinum-group metals sold to consuming industries in the United States in 1948 and 1949, in troy ounces

Industry	Platinum	Palladium	Iridium, osmium, rhodium, and ruthenium	Total
1948				
Chemical	41,778	13,816	5,722	61,316
Electrical	42,306	105,033	2,784	150,123
Dental and medical	9,494	16,740	171	26,405
Jewelry and decorative	81,756	31,783	10,589	124,128
Miscellaneous and undistributed	2,107	238	2,531	4,876
	177,441	167,610	21,797	366,848
1949				
Chemical	32,179	9,580	4,454	46,213
Electrical	28,699	54,275	2,124	85,098
Dental and medical	9,505	19,901	121	29,527
Jewelry and decorative	81,033	32,049	10,888	123,970
Miscellaneous and undistributed	1,849	419	2,239	4,507
	153,265	116,224	19,826	289,315

STOCKS

Stocks of platinum-group metals held by refiners, importers, and dealers were 296,044 ounces on Dec. 31, 1949, a decrease of 9 percent from 1948.

Stocks of platinum-group metals held by refiners, importers, and dealers in the United States, Dec. 31, 1946-1949, in troy ounces

Year	Platinum	Palladium	Iridium, osmium, rhodium and ruthenium
1946	187,624	132,523	41,876
1947	133,300	167,364	36,859
1948	146,823	142,211	34,540
1949	138,049	122,408	35,587

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

MAY 17 1950
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MINERAL MARKET REPORT
MMS NO. 1844

FULLER'S EARTH SHOWS A MODERATE DECREASE IN 1949

The output of fuller's earth in 1949 totaled 320,906 short tons valued at $5,199,642, a decrease of 6 percent in tonnage and 1 percent in value from 1948, according to reports of producers to the Bureau of Mines, U. S. Department of the Interior. The quantity produced in 1949 (320,906 tons), although 6 percent less than in 1948, the peak year, shows a slight increase over the 5-year average, 1945-49 (317,435 tons).

Consumption of fuller's earth in mineral-oil refining in 1949 (151,353 tons), comprised 47 percent of the total production. Absorbent uses consumed 69,070 tons, 22 percent of the total; insecticides, 37,342 tons, 12 percent of the total; rotary drilling mud, 30,411 tons, 9 percent; vegetable oil refining, 19,806 tons, 6 percent; and the remainder was used in other filtering and clarifying, binders, and other unspecified uses.

Rotary drilling mud was the only use that showed an increase over 1948. Operations at the Olmsted, Ill. pit were discontinued. The following States showed increases over 1948: California, Mississippi, Tennessee, and Texas; the remainder showed decreases. The Georgia-Florida area produced 57 percent of the total tonnage; Texas, 31 percent. The average value rose from $15.42 in 1948 to $16.20 in 1949.

Fuller's earth sold or used by producers in the United States, 1947-49, by States

State	1947		1948		1949	
	Sh.tons	Value	Sh.tons	Value	Sh.tons	Value
Florida & Georgia.	168,557	$2,699,660	188,014	$3,224,169	181,993	$3,194,551
Illinois..........	37,740	388,955	37,942	410,678	9,104	118,647
Texas.............	102,901	1,199,726	92,310	1,162,336	100,745	1,242,558
Other States 1/...	19,870	372,273	23,815	476,668	29,064	643,886
	329,068	4,660,614	342,081	5,273,851	320,906	5,199,642

1/ Includes California, Mississippi, Nevada, Tennessee, and Utah.

Prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE MAY 22, 1950.

MINERAL MARKET REPORTS
MMS NO. 1845

METAL MINING IN WASHINGTON, 1949 - FINAL ANNUAL FIGURES

In the production of gold, silver, copper, lead, and zinc in Washington in 1949, only gold rose (3 percent) above the 1948 levels, according to the Salt Lake Office of the Bureau of Mines, United States Department of the Interior. Silver output declined 5 percent, copper 7, lead 10, and zinc 15 percent. These decreases, coupled with lower average prices for base metals, reduced the total value of the five metals 14 percent from $11,171,715 in 1948 to $9,613,307 in 1949. The value of gold increased 3 percent, but that of silver declined 5 percent, copper 15, lead 21, and zinc 21 percent. Of the total value in 1949, zinc contributed 28 percent, gold 26, copper 22, lead 21, and silver 3 percent.

The number of producing lodes in the State decreased 3 percent from 30 in 1948 to 29 in 1949, but placers increased from 1 in 1948 to 3 in 1949. Ore production rose nearly 4 percent and was the greatest since 1944. An important factor in reducing the production of lead and zinc in the State in 1949 was the labor strike at the Grandview mine of the American Zinc, Lead & Smelting Co. in the Metaline district, which began at midnight June 30, 1948, and continued until September 6, 1949.

The value of metal production herein reported has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.905+ per fine ounce ($0.905+); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); zinc, $0.124 per pound ($0.133).

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Washington, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Ounces	Value	Ounces	Value	Pounds	Value
1945..	57,860	$2,025,100	281,444	$200,138	11,642,200	$1,571,670
1946..	51,168	1,790,880	264,453	213,678	9,054,000	1,466,748
1947..	34,965	1,223,775	293,736	265,831	4,480,000	940,800
1948..	70,075	2,452,625	375,831	340,146	11,330,000	2,458,610
1949..	71,994	2,519,790	357,853	323,875	10,550,000	2,078,350

Year	Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	
1945..	7,604,000	$653,944	23,386,000	$2,689,390	$7,140,242
1946..	5,974,000	651,166	22,658,000	2,764,276	6,886,748
1947..	10,718,000	1,543,392	27,600,000	3,339,600	7,313,398
1948..	14,294,000	2,558,626	25,276,000	3,361,708	11,171,715
1949..	12,834,000	2,027,772	21,480,000	2,663,520	9,613,307

Mine production of gold, silver, copper, lead, and zinc in Washington in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January....	5,975	31,643	465	495	810
Fenruary....	5,935	35,165	460	385	710
March......	6,770	35,675	480	550	810
April......	7,075	39,445	485	545	830
May........	6,240	38,050	435	467	825
June.......	6,245	33,255	475	460	950
July.......	4,312	23,990	365	390	547
August.....	5,355	25,515	450	410	620
September...	4,895	20,405	385	240	748
October....	4,885	21,840	350	695	1,505
November....	6,545	24,305	465	895	1,265
December...	7,762	28,565	460	885	1,120
Total: 1949	71,994	357,853	5,275	6,417	10,740
1948	70,075	375,831	5,665	7,147	12,638

Ore sold or treated in Washington in 1949, with content in terms of recovered metals

Source	Mines producing	Ore (Short tons)	Gold (Fine ounces)	Silver (Fine ounces)
Dry and siliceous gold ore....	5	69,836	28,989	158,242
Dry and siliceous silver ore..	2	3,246	--------	8,351
Copper ore..................	3	106	13	1,106
Lead ore....................	6	14,422	--------	36,027
Zinc ore....................	6	54,605	12	2,411
Zinc-copper ore.............	1	627,316	42,961	130,733
Zinc-lead ore...............	7	242,667	9	20,983
Total, lode mines...........	1/ 29	1,012,198	71,984	357,853
Total, placers..............	3	----------	10	----------
Total, 1949.................	1/ 32		71,994	357,853
1948........................	31		70,075	375,831

Source	Copper (Pounds)	Lead (Pounds)	Zinc (Pounds)
Dry and siliceous gold ore........	------------	------------	------------
Dry and siliceous silver ore......	3,500	64,400	4,500
Copper ore........................	28,500	1,600	------------
Lead ore..........................	3,300	4,005,060	3,255
Zinc ore..........................	------------	580,187	3,249,315
Zinc-copper ore...................	10,498,200	------------	5,447,000
Zinc-lead ore.....................	16,500	8,182,753	12,775,930
Total, lode mines.................	10,550,000	12,834,000	21,480,000
Total, placers....................	------------	------------	------------
Total, 1949.......................	10,550,000	12,834,000	21,480,000
1948..............................	11,330,000	14,294,000	25,276,000

1/ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.

LEADING COUNTIES

Chelan County remained in first place among Washington counties in 1949 in both tonnage of ore treated and value of metals recovered. The 636,693 tons of ore treated yielded, in recovered metals, 48,183 ounces of gold, 135,662 ounces of silver, 10,498,200 pounds of copper, and 5,447,000 pounds of zinc, having a total value of $4,552,759, compared with $4,916,796 in 1948.

Pend Oreille County held second place in value of metals and quantity of ore produced in 1949. The 243,962 tons of ore treated yielded, in recovered metals, 11,396 ounces of silver, 16,500 pounds of copper, 8,059,200 pounds of lead, and 12,992,200 pounds of zinc, valued at $2,897,951, compared with $3,138,641 in 1948.

Stevens County, in third place, produced metals in 1949 valued at $1,162,053, compared with $1,947,923 in 1948.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman Secretary
James Boyd Director

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MINERAL MARKET REPORT
MMS NO. 1846

BENTONITE SALES OFF IN 1949

For the first time in 11 years, production of bentonite declined in 1949. According to reports of producers to the Bureau of Mines, United States Department of the Interior, output decreased 6 percent in tonnage and 3 percent in value compared with 1948. Stoppage of work in the coal and steel industries was reflected in a 22 percent decrease in foundry use.

Bentonite used in the foundry and petroleum industries totaled 795,747 tons, or 92 percent of the total tonnage - foundry sand bond 178,867 tons; filtering and decolorizing oils 303,797 tons; and rotary drilling mud 313,083 tons. The remainder - 71,496 tons - found its market in a wide variety of uses. Bentonite used for filtering and decolorizing oils increased 5 percent over 1948; insecticides, 19 percent.

Nine States produced in 1949. Increases were reported from Arizona and Utah, and decreases from California, Mississippi, Montana, South Dakota, Texas, and Wyoming. Idaho's bentonite production was the first reported from that State.

The Wyoming-South Dakota area furnished 56 percent of the total tonnage in 1949, compared with 59 percent in 1948; Texas furnished 3 percent of the total - the same as for 1948; and the remainder came from Arizona, California, Idaho, Mississippi, Montana, and Nevada. The average value of bentonite sold or used rose from $7.74 a ton in 1948 to $8 a ton in 1949. The annual average tonnage for the years 1945-49 was 745,624 tons.

Bentonite sold or used by producers in the United States, 1947-49, by States

State	1947		1948		1949	
	Sh. tons	Value	Sh. tons	Value	Sh. tons	Value
California.....	5,328	$55,500	18,676	$101,450	(1/)	(1/)
South Dakota...	186,450	2,070,659	156,701	1,702,430	137,376	$1,515,927
Texas.........	18,628	146,187	29,926	282,036	27,598	302,384
Wyoming........	259,084	2,583,255	383,815	3,682,734	350,644	3,556,480
Other States 2/	294,399	1,093,985	332,442	1,367,658	351,625	1,563,961
	763,889	5,949,586	921,560	7,137,308	867,243	6,938,752

1/ Included with "Other States".
2/ Arizona, California (1949 only), Colorado (1948 only), Idaho (1949 only), Mississippi, Montana, Nevada (1948 only), and Utah.

Prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

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UNITED STATES DEPARTMENT OF THE INTERIOR
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OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE MAY 22, 1950

MINERAL MARKET REPORTS
MMS NO. 1847

METAL MINING IN TEXAS, 1949 - FINAL ANNUAL FIGURES

The mine output of gold, silver, copper, and lead in Texas in 1949 was valued altogether at $55,003 compared with $75,611 in 1948, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. The producing mines in 1949 were the Mary Ellen north of Van Horn in Culberson County; the Sancho Panza near Allamoore, Hudspeth County; and the Silver Dome northwest of Presidio and the R. I. Carr leased property near Shafter, both in Presidio County.

Gold produced in 1949 totaled 40 fine ounces valued at $1,400; silver, 2,691 fine ounces valued at $2,435; copper, 24 short tons valued at $9,456; and lead, 132 short tons valued at $41,712. Comparable figures for 1948 were: Gold, 57 ounces (value $1,995); silver, 3,065 ounces ($2,774); copper, 23 tons ($9,982); and lead, 170 tons (value $60,860).

Average metal prices in 1949 were $35 an ounce for gold, $0.9050505 an ounce for silver, $0.197 a pound for copper, and $0.158 a pound for lead. In 1948 the prices were the same for gold and silver, $0.217 for copper and $0.179 for lead.

Newly mined Texas ores yielded no recoverable zinc in 1948 or 1949. Some of the old zinc-bearing slag accumulated in earlier years at the El Paso Smelting Works of the American Smelting & Refining Co. was retreated along with current hot slag in the company slag-fuming plant put in operation in 1948. Specific data on the quantity of metals (principally zinc) recovered from the old slag are not available, and this output is not included in the mine-production statistics. Metals recovered from domestic current hot slag are credited to the various shipping mines on the basis of the assay content of the ore and are thus apportioned to the States from which they came.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, and lead in Texas in 1949, by months, and in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)
January.............	3	191	3	7
February............	6	414	6	29
March..............	2	244	4	16
April..............	5	378	6	16
May................	2	198	4	6
June-July..........	----------	----------	----------	----------
August.............	----------	11	1	----------
September..........	10	548	----------	27
October............	6	351	----------	18
November...........	3	156	----------	6
December...........	3	200	----------	7
Total: 1949....	40	2,691	24	132
1948....	57	3,065	23	170

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UNITED STATES DEPARTMENT OF THE INTERIOR
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OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE MAY 25, 1950

MINERAL MARKET REPORT
MMS. No. 1848

SALT PRODUCTION IN 1949 DOWN 5 PERCENT

Total salt production in 1949 receded more than 800,000 short tons from the 1948 production, or a decrease of 5 percent, reports the Bureau of Mines, United States Department of the Interior.

Salt was produced in the following States: California, Kansas, Louisiana, Michigan, New Mexico, New York, Ohio, Oklahoma, Texas, Utah, Virginia, and West Virginia. In 1949, 59 percent of the total national output was contributed by Michigan, Ohio, and New York compared with 65 percent in 1948.

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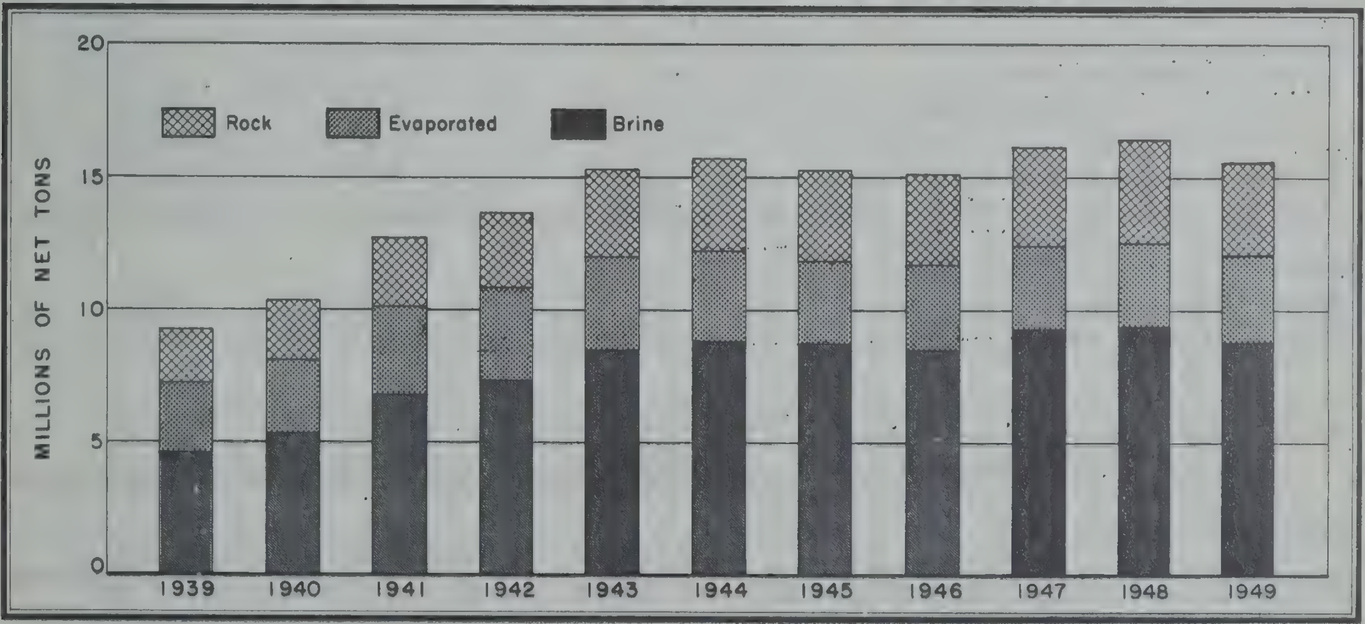

Figure 2.-Trends in the quantity of rock salt, evaporated salt, and brine (in terms of salt content) sold or used by producers in the United States, 1939-49.

Prepared by Florence E. Harris and E. M. Tucker, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

Salient statistics of the salt industry in the United States, 1935-39 (average) and 1948-49

	1935-39 Average	1948	1949
Sold or used by producers:			
Dry salt:			
Evaporated (manufactured) short tons..	2,507,374	3,207,403	3,284,361
Rock salt........ do	1,947,254	3,846,846	3,468,005
Total........... do	4,454,628	7,054,249	6,752,366
Value......................	$21,730,339	$46,430,927	$46,353,711
Average per ton..........	$4.88	$6.58	$6.86
Brine:			
Short tons..................	4,205,587	9,349,044	8,838,331
Value......................	$1,675,273	$7,900,855	$7,694,515
Total salt:			
Short tons..................	8,660,215	16,403,293	15,590,697
Value 1/....................	$23,405,612	$54,331,782	$54,048,226
Imports for consumption:			
For curing fish...short tons.	2/ 21,250	768	---
Value......................	2/ $43,722	$2,744	---
In bags, barrels, etc. short tons..	1,385	1,591	2,851
Value......................	$11,813	$20,971	$40,308
In bulk.........short tons..	24,131	3,262	3,458
Value......................	$55,876	$17,033	$20,297
Total:			
Short tons..................	46,766	5,621	6,309
Value......................	$111,411	$40,748	$60,605
Exports:			
Short tons..................	90,214	3/ 387,601	359,776
Value......................	$521,652	3/ $5,930,170	$3,353,115
Apparent consumption 4/ short tons..	8,616,767	3/16,021,313	15,237,230

1/ Values are f.o.b. mine or refinery and do not include cost of cooperage or containers.

2/ Includes salt in bags, sacks, barrels, or other packages - 1938: 93 tons, $673.

3/ Revised figure.

4/ Quantity sold or used by producers plus imports minus exports.

Production by States. - Salt was produced in the States and Puerto Rico by 46 companies and 71 plants in 1949.

Salt sold or used by producers in the United States, 1948-49, by States

State	1948 Quantity Short tons	1948 Quantity Percent of total	1948 Value	1949 Quantity Short tons	1949 Quantity Percent of total	1949 Value
California	914,035	6	$3,927,722	964,807	6	$4,110,271
Kansas	831,756	5	4,960,828	854,707	5	5,373,489
Louisiana	2,223,249	13	6,444,751	2,030,076	13	5,837,714
Michigan	4,387,879	27	16,265,743	4,064,106	26	16,009,117
New Mexico	(2)	(2)	(2)	(2)	(2)	(2)
New York	3,065,831	19	13,056,542	2,951,750	19	13,042,322
Ohio	2,752,696	17	5,884,343	2,195,778	14	5,134,923
Puerto Rico	15,145	(1)	112,072	12,664	(1)	77,322
Texas	1,354,109	8	1,712,169	1,637,388	11	2,453,803
Utah	113,779	1	429,494	78,611	1	386,935
West Virginia	246,732	1	1,197,645	355,515	2	1,288,471
Other States 3/	498,082	3	340,473	445,295	3	333,859
Total	16,403,293	100	54,331,782	15,590,697	100	54,048,226

1/ Less than 0.5 percent.
2/ Included in "Other States."
3/ Includes Nevada, New Mexico (1948 and 1949), Oklahoma and Virginia.

Method of recovery. - There was no change in the United States in the basic method of recovery. Production obtained by these methods is shown in the following.

Salt sold or used by producers in the United States, 1948-49, by method of recovery

Method of recovery	1948 Short tons	1948 Value	1949 Short tons	1949 Value
Evaporated:				
Bulk:				
Open pans or grainers	462,325	$6,868,010	504,771	$6,956,724
Vacuum pans	1,724,264	16,908,921	1,744,569	16,950,986
Solar	746,303	2,749,560	766,183	2,818,374
Pressed blocks	274,511	2,933,694	268,838	3,230,985
Rock:				
Bulk	3,798,016	16,510,756	3,404,791	15,798,750
Pressed blocks	48,830	459,986	63,214	597,892
Salt in brine (sold or used as such)	9,349,044	7,900,855	8,838,331	7,694,515
Total	16,403,293	54,331,782	15,590,697	54,048,226

Evaporated salt. - Produced either from the original brine of wells and ponds or from artificial brine made by forcing water into beds of rock salt, the evaporated salt output was contributed by 45 plants in 12 States and Puerto Rico. In 1949 the tonnage was increased by 76,958 short tons over that of 1948.

Evaporated salt sold or used by producers in the United States, 1948-49, by States

	1948		1949	
	Short tons	Value	Short tons	Value
California..........	740,418	$3,464,327	844,227	$3,793,838
Kansas..............	321,812	3,255,070	334,611	3,617,166
Louisiana...........	88,304	991,871	99,725	886,953
Michigan............	871,226	9,705,533	873,949	9,804,170
New York............	429,870	5,620,727	417,518	5,867,504
Ohio................	441,169	4,287,147	445,591	3,976,109
Puerto Rico.........	15,145	112,072	12,664	77,322
West Virginia.......	120,397	1,072,758	136,666	1,104,542
Other States 1/.....	179,062	950,680	119,410	829,465
Total...........	3,207,403	29,460,185	3,284,361	29,957,069

1/ Includes Nevada, New Mexico, Oklahoma, Texas, and Utah.

Rock salt. - As in 1948, rock salt was produced in 8 States from 20 mines. Although output declined 378,841 short tons in 1949 from the record high of 1948 it still constitutes more than 50 percent of the dry salt total.

Rock salt sold by producers in the United States, 1945-49

Year	Short tons	Value	Year	Short tons	Value
1945...........	3,505,740	$12,964,391	1948..........	3,846,846	16,970,742
1946...........	3,412,008	13,308,001	1949..........	3,468,005	16,396,642
1947...........	3,754,353	15,989,680			

Pressed blocks. - In 1949 pressed blocks were made of evaporated salt by 23 plants and from rock salt by 9 plants.

Pressed-salt blocks sold by original producers of the salt in the United States 1945-49

Year	From evaporated salt		From rock salt		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1945..........	242,632	$2,479,109	94,811	$849,154	337,443	$3,328,263
1946..........	298,314	2,942,966	97,060	828,412	395,374	3,771,378
1947..........	260,399	2,708,857	69,163	638,958	329,562	3,347,815
1948..........	274,511	2,933,694	48,830	459,986	323,341	3,393,680
1949..........	268,838	3,230,985	63,214	597,892	332,052	3,828,877

Salt content of brine. - Seventeen operations produced brine in 7 States. Although a decline of 5 percent from that of 1948 was registered, salt of brine constituted 57 percent of total production of salt, as in 1948.

USES

The quantity of salt produced for the majority of broad uses declined in 1949. Soda ash consumption declined most of all or more than a million tons. Increases in some uses offset the decreases partially. The total quantity of salt used for chlorine making in 1949 reached a new high record, exceeding that in 1948 by well over a half a million tons. More salt was used for water treatment and meat packing and several smaller uses.

Salt sold or used by producers in the United States, 1948-49, by classes and uses in short tons

Use	1948			1949		
	Evaporated	Rock	Brine	Evaporated	Rock	Brine
Chlorine, bleaches, chlorates, etc....	336,180	705,315	1,796,533	366,972	681,408	2,386,057
Soda ash...........	(1)	-	7,392,248	(1)	-	6,255,242
Dyes and organic chemicals.........	78,873	104,401	-	50,657	58,049	-
Soap (precipitant).	33,350	10,852	-	26,561	10,715	-
Other chemicals....	91,529	523,737	(2)	85,691	442,282	(2)
Textile processing.	22,838	92,555	-	25,625	83,749	-
Hides and leather..	79,964	150,647	-	76,378	137,962	-
Meat packing.......	324,041	366,259	-	329,834	379,281	-
Fish curing........	15,351	19,997	-	12,405	13,199	-
Butter, cheese, & other dairy products	97,339	5,017	-	64,685	5,305	-
Canning & preserving	125,958	18,853	-	109,584	14,587	-
Other food processing	193,896	19,279	-	195,403	20,236	-
Refrigeration.......	20,540	196,087	-	19,598	146,871	-
Livestock...........	553,966	238,532	-	551,954	220,587	-
Highways, railroads, dust & ice control..	8,260	460,674	-	7,804	404,634	-
Table and other household..........	499,339	173,648	-	496,739	131,041	-
Water treatment.....	193,861	253,095	(2)	229,114	262,264	(2)
Agriculture.........	13,609	19,867	-	20,317	29,030	-
Metallurgy..........	16,625	49,152	-	19,051	53,934	-
Undistributed 3/....	501,884	438,879	160,263	595,989	372,871	197,032
Total..........	3,207,403	3,846,846	9,349,044	3,284,361	3,468,005	8,838,331

1/ Data for evaporated salt included with "Undistributed."
2/ Data for salt in brine included with "Undistributed."
3/ Comprises miscellaneous uses and data not presentable by classes (footnotes 1 and 2), including most exports.

Distribution (shipments) of evaporated and rock salt in the United States, 1948-49 by States of destination, in short tons

Destination	1948		1949	
	Evaporated	Rock	Evaporated	Rock
Alabama	14,875	93,655	15,647	94,788
Arizona	15,732	3,014	18,760	2,498
Arkansas	11,278	41,607	11,170	41,096
California	355,451	65,116	369,225	63,227
Colorado	37,276	36,821	33,812	24,791
Connecticut	13,432	23,409	13,429	14,903
Delaware	8,005	12,206	5,875	12,551
District of Columbia	5,843	2,654	5,368	2,059
Florida	10,342	31,569	10,804	28,560
Georgia	22,464	42,556	24,652	41,054
Idaho	19,978	1,394	16,543	1,426
Illinois	227,036	223,613	231,529	247,275
Indiana	103,022	75,510	105,186	62,068
Iowa	101,813	103,541	108,181	107,251
Kansas	49,151	137,744	52,743	180,186
Kentucky	33,803	66,252	32,673	58,083
Louisiana	14,690	135,167	13,943	64,010
Maine	13,578	59,435	11,715	60,544
Maryland	36,439	61,379	36,262	60,259
Massachusetts	54,312	93,771	54,446	70,199
Michigan	118,666	115,852	115,782	121,265
Minnesota	104,466	71,523	118,188	77,364
Mississippi	9,537	23,018	9,933	25,764
Missouri	72,937	76,996	76,532	73,969
Montana	22,215	2,597	18,181	2,483
Nebraska	53,462	61,046	54,895	69,217
Nevada	5,862	77,662	7,325	57,054
New Hampshire	4,581	54,901	4,595	58,899
New Jersey	113,268	163,750	101,507	139,183
New Mexico	7,954	22,622	9,501	22,414
New York	213,273	585,470	194,196	571,272
North Carolina	48,860	62,988	52,927	65,175
North Dakota	12,024	6,119	11,814	1,313
Ohio	208,826	167,616	193,744	127,302
Oklahoma	29,455	31,721	29,569	24,535
Oregon	64,196	401	73,751	401
Pennsylvania	138,986	148,733	129,659	108,985
Rhode Island	8,224	14,584	8,793	11,378
South Carolina	9,836	17,391	12,427	18,281
South Dakota	21,061	20,362	20,440	15,555
Tennessee	32,750	70,011	33,117	65,478
Texas	59,867	217,010	46,995	202,967
Utah	20,763	1,799	23,114	1,863
Vermont	5,375	18,617	6,432	24,929
Virginia	53,526	103,855	55,162	89,406
Washington	161,507	1,227	174,098	1,052
West Virginia	140,341	80,971	162,043	62,089
Wisconsin	125,357	43,489	128,073	44,311
Wyoming	10,908	2,419	8,886	3,611
Other 1/	180,800	270,683	230,719	143,662
Total	3,207,403	3,846,846	3,284,361	3,468,005

1/ Includes salt used in Puerto Rico (evaporated salt), shipments to noncontiguous Territories of the United States, exports, and some shipments to unspecified destinations.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JUNE 6, 1950.

MINERAL MARKET REPORTS
MMS NO. 1849.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN SOUTH DAKOTA, 1949 - FINAL ANNUAL FIGURES

Production of gold in South Dakota increased 23 percent in 1949 over 1948 and was the largest since wartime restrictions on gold mining were rescinded in 1945, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. The output of silver, recovered incidental to gold mining, increased 16 percent.

The Homestake mine, at Lead, Lawrence County, largest producer of gold in the United States, operated at the highest production rate of the postwar period during the last six months of 1949. Since the mine resumed operations after the wartime shutdown it has not operated a full year at normal capacity because of the limited number of men available for underground work. The full number of men required was nearly reached in November 1949. Output from the Bald Mountain mine at Trojan, an important gold producer, was a little higher than in 1948. Production by other South Dakota properties was small. The Belle Eldridge mine, which produced zinc-lead ore in 1948, was idle in 1949.

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The State production of gold in 1949 was 464,650 fine ounces valued at $16,262,750; silver, 109,383 fine ounces valued at $98,997; and lead (produced in 1948 but not marketed until 1949), 4 tons valued at $1,264 - a total value of $16,363,011 compared with $13,323,894 in 1948. The 1948 output of gold was 377,850 ounces valued at $13,224,750; silver, 94,693 ounces valued at $85,702; lead 16 tons valued at $5,728; and zinc 29 tons valued at $7,714. The prices used in both years for gold and silver were $35 and $0.9050505, respectively, an ounce. The lead price used was $0.158 and $0.179 in 1948.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, and lead in South Dakota, 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Lead (short tons)	Zinc (short tons)
January	31,612	7,626	-	-
February	32,032	7,116	-	-
March	38,277	8,706	-	-
April	39,907	9,049	-	-
May	35,737	8,485	-	-
June	34,552	8,774	4	-
July	41,012	9,724	-	-
August	43,560	10,201	-	-
September	38,551	8,686	-	-
October	40,512	9,689	-	-
November	42,924	10,229	-	-
December	45,974	11,098	-	-
Total: 1949	464,650	109,383	4	-
1948	377,850	94,693	16	29

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman, Secretary JAMES BOYD, Director

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FOR IMMEDIATE RELEASE MINERAL MARKET REPORT NO. MMS 1850

CARBON BLACK PRODUCTION AND SALES DECLINE AGAIN IN 1949

The production of carbon black in 1949 declined 6 percent to 1,223,636 thousand pounds while sales declined 10 percent to 1,125,410 thousand pounds. Producers' stocks during the year increased by 98,218 thousand pounds to 216,461 thousand pounds.

Production decreased in all reporting states except New Mexico. Texas' production declined 3 percent. It produced 71.5 percent of all carbon black in the country. Contact black production decreased by nearly 50 million pounds and furnace black by 25 million pounds.

The decline in sales took place principally in contact grades. Sales of furnace grades declined only 1 percent. Rubber companies purchased 767,131 thousand pounds, 103 million pounds less than in 1948. Sales to ink companies remained practically unchanged and paint companies purchased 3 percent more than in 1948. Export sales declined, for the first time since 1944, to 303,244 thousand pounds.

Stocks of contact black held by producers at the end of the year totaled 119,599 thousand pounds, up 91,953 thousand pounds from 1948. Stocks of furnace blacks increased 6,265 thousand pounds to 96,862 thousand pounds.

The average yield of carbon black from natural gas declined again, though slightly, to 2.38 pounds per thousand cubic feet. The carbon black industry consumed 427,892 million cubic feet of natural gas valued at 4.76 cents per thousand cubic feet. This average value is 0.03 cents per thousand cubic feet above the value in 1948. In addition, 72,387,000 gallons of liquid hydrocarbons were consumed compared with 44,600,000 gallons in 1948.

The average value at plants of all carbon blacks increased from 5.88 cents per pound in 1948 to 6.10 cents in 1949.

The number of plants operating in 1949 was 64, one more than in 1948. One new furnace plant was built in Texas and parts of two channel plants were moved to new locations. Two channel plants were combined; seven channel plants and one furnace plant were shut down during or at the close of the year.

Tables prepared by B. E. Oppegard under the supervision of F. S. LOTT, Chief
Petroleum Economics Branch, Fuels and Explosives Division.

Salient statistics of carbon black produced from natural gas in the U.S., 1948-49.

	1948	1949
Number of producers reporting..................	24	21
Number of plants...............................	63	64
Quantity produced:		
By States and districts:		
Louisiana................thousand pounds.	165,032	1/ 160,460
Texas:		
Panhandle district.............do.......	1/ 653,480	1/ 625,760
Rest of State..................do.......	1/ 249,904	1/ 249,083
Total Texas..................do.......	1/ 903,384	1/ 874,843
Other States (Calif., Kans., N. Mex., Okla.)................do.......	1/ 229,313	188,333
Total United States............do.......	1/ 1,297,729	1/ 1,223,636
By processes:		
Contact.........................do.......	677,133	627,650
Furnace.........................do.......	1/ 620,596	1/ 595,986
Quantity sold:		
Domestic:		
To rubber companies............do.......	2/ 870,564	767,131
To ink companies...............do.......	32,436	32,054
To paint companies.............do.......	6,799	7,005
For miscellaneous purposes......do.......	2/ 22,634	15,976
Total.........................do.......	932,433	822,166
Exports.........................do.......	321,915	303,244
Total sales...................do.......	1,254,348	1,125,410
Losses..............................do.......	250	8
Stocks held by producers Dec. 31:		
Contact types....................do.......	27,646	119,599
Furnace types....................do.......	90,597	96,862
Total........................do.......	118,243	216,461
Value at plants of carbon black produced:		
Total......................thousand dollars.	76,295	74,685
Average per pound.....................cents.	5.88	6.10
Estimated quantity of natural gas used million cubic feet	480,646	427,892
Average yield per M cu. ft.............pounds.	2.41	2.38
Average value of gas per M cu. ft........cents.	4.73	4.76
Estimated volume of liquid hydrocarbons used......................thousand gallons.	44,600	72,387

1/ Includes carbon black produced from liquid hydrocarbons.
2/ Revised.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE MAY 31, 1950.

MINERAL MARKET REPORTS
MMS NO. 1851.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN MISSOURI, OKLAHOMA, KANSAS, AND ARKANSAS, 1949
FINAL ANNUAL FIGURES

The mine production of lead in Missouri, Oklahoma, Kansas, and Arkansas as a whole was larger in 1949 than in either 1948 or 1947, but zinc output decreased for the eighth consecutive year, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. During the first few months of 1949 the prices of lead and zinc were high enough to stimulate the mining of lower-grade ores, and production rates rose. This trend was reversed by a downward movement in the metal prices that began in March and culminated in a 44-percent decline in the price of lead by May 26 and a nearly 49-percent decrease in that of zinc by June 15. The prices from July to December averaged only moderately higher than the June lows.

In the Tri-State zinc-lead district, which produced 99 percent of the four-States' total output of zinc and 20 percent of the lead, the price decline caused indefinite closing, temporary shutdown, or curtailment of virtually all operations. Mines that continued producing and those that reopened reduced wages and generally resorted to selective mining. The district production of zinc decreased 7 percent from 1948; lead production, however, increased 15 percent as the result of selective mining.

In the Southeastern Missouri region the large lead mines, which in 1948 were shut down 2-1/2 months by labor strikes, operated continuously in 1949. Production of lead was 25 percent higher than in 1948 but was slightly less than in 1947, when the operating time of the mines was normal. The quantity of copper and silver recovered from lead-copper ore and as a byproduct from lead concentrates increased.

Final figures for 1949 show a total production in the four States (in terms of recoverable metals) of 157,153 short tons of lead and 79,378 tons of zinc compared with 127,614 and 85,892 tons, respectively, in 1948. The Missouri output of copper was 3,670 tons and silver 123,413 fine ounces in 1949 compared with 2,370 tons and 114,187 ounces in 1948.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Output of lead by districts in 1949 was: Southeastern Missouri, 126,269 tons; Tri-State district, 30,883 tons, and Ponca district (Arkansas), 1 ton.

Zinc output was: Tri-State district, 78,628 tons; Southeastern Missouri, 749 tons, and Ponca district, 1 ton.

The value of the four States' output of recovered metals in 1949 was $49,660,348 for lead, $19,685,744 for zinc, $1,445,980 for copper, and $111,695 for silver - a total of $70,903,767 compared with $69,665,009 in 1948. Average metal prices used in 1949 were $0.158 a pound for lead, $0.124 a pound for zinc, $0.197 a pound for copper, and $0.9050505 an ounce for silver, In 1948 the prices were $0.179 for lead, $0.133 for zinc, $0.217 for copper, and $0.9050505 for silver.

Mine production of lead and zinc in Arkansas, Kansas, Missouri, and Oklahoma, by States, 1948-49, in terms of recoverable metals

State	Lead				Zinc			
	1948		1949		1948		1949	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
Arkansas..	22	$7,876	1	$316	31	$8,246	1	$248
Kansas....	8,386	3,002,188	9,772	3,087,952	35,577	9,463,482	29,433	7,299,384
Missouri..	102,288	36,619,104	127,522	40,296,952	6,463	1,719,158	5,911	1,465,928
Oklahoma..	16,918	6,056,644	19,858	6,275,128	43,821	11,656,386	44,033	10,920,184
	127,614	45,685,812	157,153	49,660,348	85,892	22,847,272	79,378	19,685,744

Mine production of silver, copper, lead, and zinc in Arkansas, Kansas, Missouri, and Oklahoma in 1949, by months, in terms of recovered metals

Month	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January.........	7,899	201	12,310	7,002
February........	8,174	243	13,070	8,313
March...........	11,270	293	14,834	9,801
April...........	9,196	255	12,685	9,434
May.............	10,065	289	12,784	7,001
June............	11,199	328	13,047	6,407
July............	10,131	280	10,868	1,928
August..........	12,057	413	14,065	5,209
September.......	11,087	380	13,568	5,863
October.........	10,627	308	13,189	5,713
November........	10,933	341	13,427	5,951
December........	10,775	339	13,306	6,756
Total 1949...	123,413	3,670	157,153	79,378

Tri-State district (Oklahoma, Kansas, Southwestern Missouri). - The production of zinc concentrates in the Tri-State district in 1949 was 147,178 tons valued at $11,445,018 and that of lead concentrates 41,471 tons valued at $7,824,788 - a total value of $19,269,806 compared with $22,231,715 in 1948. Production in 1948 was 159,609 tons of zinc concentrates valued at $13,929,151 and 35,862 tons of lead concentrates valued at $8,302,564.

The weekly quoted price of zinc concentrates (60-percent grade) at Joplin was $110 a ton from January 1 to March 19. Successive declines reduced the price to $50 for the week ending June 18. From July 23 through December the price ranged from $51 a ton to $60 and was $57 December 31. After the price began to decline March 26 the Eagle-Picher Central mill paid $2.50 a ton above the quoted market price for zinc concentrates made from ore sent to it for treatment.

The price of lead concentrates (80-percent) was $290.92 a ton from January 1 to March 5. It then moved downward by stages to $148.63 on May 28. The price changed 13 times the rest of the year, ranging from $147.67 to $192.91, and was $147.67 on December 31.

The decline in the price of concentrates from March to June caused about 50 of the mines to shut down, and most of the other 76 that were active curtailed operations. The June output of concentrates decreased about 35 percent compared with March. The July production of zinc concentrates, reduced to an exceptionally low level by previous shutdowns and a work stoppage at the mines and 15,000-ton Central mill of the Eagle-Picher Mining & Smelting Co., was only 3,529 tons compared with 18,256 tons in the peak month of March. From August through December the monthly production of zinc concentrates averaged 10,891 tons and lead concentrates 3,552 tons. In December about 85 mines, 18 mine mills, 1 tailing mill, and 1 slime or cleanup mill were operating compared with 120, 29, 4, and 3, respectively, in December 1948. The average recovery from 4,470,778 tons of crude ore milled in 1949 was 0.93 percent in lead concentrates and 3.11 percent in zinc concentrates; the recovery from 1,602,620 tons of old tailings was 0.003 in lead concentrates and 0.50 in zinc concentrates.

Southeastern Missouri. - The St. Joseph Lead Co., largest producer of lead in the United States, operated its several large groups of mines and four mills (combined daily capacity 26,800 tons) in St. Francois County and Mine La Motte mine and 2,000-ton mill in Madison County. The National Lead Co. St. Louis Smelting & Refining Division continued to mine lead-copper-(cobalt-nickel-iron) ore from its Madison group at Fredericktown; the output of both lead and copper concentrates from the company 1,200-ton all-flotation mill increased sharply over 1948. The Catherine-Fleming mine was operated by the Park City Consolidated Mines Co. from January to March and by the Fredericktown Lead Co. the rest of the year. The Park City mill at the Ruth mine was sold for dismantling.

Mine production of lead and zinc concentrates in the Tri-State region (final annual figures) 1949, by areas, in short tons

Area	Material treated	Quantity milled	Lead concentrates		Zinc concentrates	
			Quantity	Value	Quantity	Value
Kansas	Crude ore	1,602,976	12,951	$2,460,954	52,245	$4,079,312
	Old tailings	544,034	22	2,102	2,724	183,068
	Total	2,147,010	12,973	2,463,056	54,969	4,262,380
Southwestern Missouri	Crude ore	323,967	1,587	341,506	9,591	770,070
	Old tailings	8,000	1	150	96	4,979
	Total	331,967	1,588	341,656	9,687	775,049
Oklahoma	Crude ore	2,543,835	26,884	5,016,486	77,262	5,935,429
	Old tailings	1,050,586	26	3,590	5,260	472,160
	Total	3,594,421	26,910	5,020,076	82,522	6,407,589
District total		6,073,398	41,471	7,824,788	147,178	11,445,018

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE MAY 29, 1950

MINERAL MARKET REPORT
M.M.S. No. 1852

STATISTICAL SUMMARY OF LIGNITE IN 1949

According to reports received by the Bureau of Mines, United States Department of the Interior, the production of lignite in the United States in 1949, exclusive of small mines producing less than 1,000 tons, totaled 3,092,130 net tons, a slight increase over 1948, and the highest production since 1937. The average value per ton increased from $2.27 per ton in 1948 to $2.37 in 1949. The average number of men employed totaled 716 a slight increase over the 694 men working in 1948; and the output per man per day based upon calculated man-days was 18.50 tons in 1949. The industry worked an average of 233 days in 1949 compared with 254 in the preceding year. North Dakota produced 96 percent of the total lignite mined in the United States; California, Montana, South Dakota, and Texas together accounted for the remaining 4 percent.

The production of lignite from strip pits amounted to 2,581,412 tons--83 percent of the total output of the industry. North Dakota produced 97 percent of the lignite mined by this method; the output of lignite from stripping operations for the other four States amounted to only 84,491 tons.

In 1949, the Bureau of Mines received reports from 55 mines producing 1,000 tons or more annually. Seven mines produced over 100,000 tons and the output of these mines amounted to 80 percent of the total production, 3 reported production of 50,000 to 100,000 tons each and accounted for 7 percent of the total, and 45 mines producing less than 50,000 tons accounted for 13 percent of the total.

According to the Federal Power Commission it is estimated that 1,213,000 tons of lignite were consumed in generating electric energy in 1949; this amounts to 39 percent of the total lignite mined in the United States in that year.

All data are submitted on a voluntary basis by producers of lignite and the Bureau of Mines wishes to thank them for their cooperation in supplying the data without which this report would not have been possible.

Prepared by Marian I. Cooke and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Fuels and Explosives Division.

Summary of production, value, men employed, days operated, man-days of labor, and output per man per day at lignite mines in the United States in 1949, by States 1/

	California	Montana 2/	North Dakota	South Dakota	Texas	Total
Production (net tons):						
Loaded at mines for shipment	----------	----------	2,366,045	620	49,213	2,415,878
Commercial sales by truck or wagon	3,900	45,050	508,714	25,809	----------	583,473
Used by employees, taken by locomotives at tipple, and other uses	----------	10	3/ 82,135	----------	260	82,405
Used at mine for power and heat	----------	8	10,366	----------	----------	10,374
Total production: 1949	3,900	45,068	2,967,260	26,429	49,473	3,092,130
1948	1,450	37,660	2,960,989	29,094	56,693	3,085,886
Value:						
Totals: 1949	$39,000	$150,785	$7,003,712	$91,646	$50,410	$7,335,553
1948	$14,500	$124,322	$6,729,426	$86,208	$58,034	$7,012,490
Average per ton: 1949	$10.00	$3.35	$2.36	$3.47	$1.02	$2.37
1948	$10.00	$3.30	$2.27	$2.96	$1.02	$2.27
Number of employees:						
Underground	----------	29	133	----------	----------	162
Surface (including strip pits)	3	14	504	17	16	554
Total employees: 1949	3	43	637	17	16	716
1948	4	36	620	18	16	694
Average number of days mines operated:						
1949	156	167	238	250	223	233
1948	82	175	260	212	265	254
Man-days of labor: 1949	468	7,192	151,639	4,245	3,560	167,104
Average tons per man per day: 1949	8.33	6.27	19.57	6.23	13.90	18.50

1/ Exclusive of small mines producing less than 1,000 tons.
2/ Including output from Custer, Dawson, Richland, Roosevelt, and Sheridan Counties.
3/ Includes some lignite made into briquets.

Summary of stripping operations that produced lignite in the United States in 1949, by States

	California	Montana	North Dakota	South Dakota	Texas	Total
Number of strip pits 1/	1	1	34	2	1	39
Number of shovels and dragline excavators 2/	1	1	47	2	1	52
Coal produced by stripping	3,900	4,697	2,496,913	26,429	49,473	2,581,412
Total value at mines	$39,000	$14,091	$5,982,382	$91,652	$50,410	$6,177,535
Average value per ton	$10.00	$3.00	$2.40	$3.47	$1.02	$2.39
Number of employees:						
In strip pits	3	6	260	15	10	294
All others	----------	1	195	2	6	204
Total	3	7	455	17	16	498
Average number of days mines operated	156	62	232	250	223	229
Man-days of labor	468	434	105,452	4,245	3,560	114,159
Average tons per man per day	8.33	10.82	23.68	6.23	13.90	22.61

1/ Includes some pits in which stripping is done by hand.
2/ In some cases the same equipment was used for stripping or excavating and for loading coal; this duplication has been eliminated. In some cases coal was excavated by machine and loaded by hand.

Production, value, men employed, days operated, man-days of labor, and output per man per day at lignite mines in the United States in 1949, by States and counties

County	Total production (net tons)	Value		Total number of employees	Man-days of labor	Average number of days mine operated	Average tons per man per day
		Total	Average per ton				
CALIFORNIA							
Amador: Total California	3,900	$39,000	$10.00	3	468	156	8.33
MONTANA							
Custer	13,793	$47,124	$3.42	11	1,908	173	7.23
Dawson	2,648	7,944	3.00	4	624	156	4.24
Richland	8,756	31,664	3.62	6	1,184	197	7.40
Roosevelt	4,440	17,760	4.00	6	1,050	175	4.23
Sheridan	15,431	46,293	3.00	16	2,426	152	6.36
Total Montana	45,068	150,785	3.35	43	7,192	167	6.27
NORTH DAKOTA							
Adams, Burleigh and Divide	280,710	$721,155	$2.57	59	16,233	275	1/ 17.29
Bowman	5,881	19,336	3.29	6	1,200	200	4.90
Burke	429,152	1,043,909	2.43	65	15,153	233	1/ 28.32
Dunn	7,168	20,070	2.80	4	900	225	7.96
Golden Valley	3,794	10,815	2.86	4	588	147	6.45
Grant	22,658	70,682	3.12	14	2,125	152	1/ 10.66
Hettinger	14,488	42,520	2.93	13	1,840	142	7.87
McKenzie	3,577	12,521	3.50	5	610	122	5.86
McLean	323,134	780,901	2.42	63	14,151	225	1/ 22.83
Mercer	1,225,236	2,766,204	2.26	219	57,959	265	1/ 21.14
Morton	48,888	119,426	2.44	25	4,635	185	1/ 10.55
Oliver	5,476	13,665	2.50	3	504	168	1/ 10.87
Stark	106,658	176,278	1.65	41	8,958	218	1/ 11.91
Ward	472,780	1,154,577	2.44	100	24,596	246	1/ 19.22
Williams	17,660	51,653	2.92	16	2,187	137	8.07
Total North Dakota	2,967,260	7,003,712	2.36	637	151,639	238	19.57
SOUTH DAKOTA							
Corson	2,280	$7,906	$3.47	3	405	135	5.63
Dewey	24,149	83,740	3.47	14	3,840	274	6.29
Total South Dakota	26,429	91,646	3.47	17	4,245	250	6.23
TEXAS							
Milam: Total Texas	49,473	$50,410	$1.02	16	3,560	223	1/ 13.90

1/ Output is obtained chiefly from strip pits in which the production per man per day is large.

Number and production of lignite mines in the United States, in 1949, classified by size of output

	Mines		Production		
			Net tons		Percent of total
	Number	Percent	Total	Average per mine	
1. (100,000 tons and over) ------------	7	12.7	2,477,735	353,962	80.2
2. (50,000 and under 100,000) ---------	3	5.5	214,316	71,379	6.9
3. (10,000 and under 50,000) ----------	12	21.8	257,136	21,428	8.3
4. (Under 10,000 tons) ----------------	33	60.0	142,943	4,332	4.6
Total -------------------------	55	100.0	3,092,130	56,221	100.0

Lignite mined by different methods in the United States in 1949, by States, in net tons

	California	Montana	North Dakota	South Dakota	Texas	Total
From underground workings:						
Shot off the solid ----------	-------	40,371	24,885	-------	-------	65,256
Cut by machines 1/ ----------	-------	-------	445,462	-------	-------	445,462
Total underground -----	-------	40,371	470,347	-------	-------	510,718
From strip pits ---------------	3,900	4,697	2,496,913	26,429	49,473	2,581,412
Grand total production ------	3,900	45,068	2,967,260	26,429	49,473	3,092,130

1/ A total of 8 machines was used - 2 "permissible" and 6 "other types."

Lignite loaded for shipment in 1949, by individual railroads, as reported by operators, in net tons

Railroads	State	Quantity
Great Northern -------------------------------------	North Dakota	593,646
Chicago, Milwaukee, St. Paul & Pacific -------------	(North Dakota	34,922
	(South Dakota	620
Northern Pacific -----------------------------------	North Dakota	1,120,791
Minneapolis, St. Paul & Sault Ste. Marie ------------	North Dakota	616,686
Rockdale, Sandow & Southern ------------------------	Texas	49,213
Total --	--------------	2,415,878

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES A. BOYD, Director

FOR RELEASE MAY 31, 1950.

MINERAL MARKET REPORTS
MMS NO. 1853.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN UTAH, 1949 – FINAL ANNUAL FIGURES

Outputs of gold, silver, copper, lead, and zinc in Utah in 1949 failed to reach 1948 levels, according to the Sale Lake City Office of the Bureau of Mines, United States Department of the Interior. Yield of gold declined 15 percent, silver 17, copper 13, lead 5, and zinc 2; ore output slumped nearly 15 percent. Active lode mines dropped from 118 in 1948 to 93 in 1949; active placers remained the same (2).

Declines in the production of the five metals in 1949, coupled with lower average prices for base metals, brought about a 15-percent decrease in the value for gold, 17 for silver, 21 for copper, 16 for lead, and nearly 9 for zinc. The value of the five metals in 1949 was $121,649,828, or 19 percent less than the value of $149,763,677 in 1948. Of the total value in 1949, copper contributed 64 percent, lead 14, gold 9, zinc 8, and silver 5 percent.

Compared with 1948, the value of metal production decreased 18 percent in the West Mountain (Bingham) district and 32 in the Park City region, but only 2 percent in the Tintic district. The West Mountain (Bingham) district produced 91 percent of the State gold, 70 percent of the silver, 99 percent of the copper, 61 percent of the lead, and 55 percent of the zinc; total value of the five metals represented 88 percent of the State total value.

The value of metal production herein reported has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); zinc, $0.124 per pound ($0.133).

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Utah in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January............	3,085	272,455	120	3,480	3,005
February...........	15,240	368,485	7,650	3,080	2,570
March..............	32,968	692,055	20,730	5,510	4,515
April..............	33,115	694,445	20,200	5,630	4,610
May................	30,305	675,650	18,380	5,640	4,125
June...............	28,075	658,321	18,110	5,385	4,210
July...............	25,940	545,055	17,545	3,555	2,445
August.............	25,850	555,205	18,455	3,680	2,505
September..........	29,075	587,524	17,265	4,260	2,995
October............	27,200	509,365	17,910	3,720	2,760
November...........	31,420	577,215	20,320	4,350	3,270
December...........	31,785	589,105	20,560	4,782	3,660
Total: 1949.......	314,058	6,724,880	197,245	53,072	40,670
1948.......	368,422	8,045,329	227,007	55,950	41,490

Mine production of gold, silver, copper, lead, and zinc in Utah, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945	279,979	$9,799,265	6,106,545	$4,342,432	226,376	$61,121,520
1946	178,533	6,248,655	4,118,453	3,327,710	114,284	37,028,016
1947	421,662	14,758,170	7,780,032	7,040,929	266,533	111,943,860
1948	368,422	12,894,770	8,045,329	7,281,429	227,007	98,521,038
1949	314,058	10,992,030	6,724,880	6,086,356	197,245	77,714,530

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945	40,817	$7,020,524	33,630	$7,734,900	$90,018,641
1946	30,711	6,694,998	28,292	6,903,248	60,202,627
1947	49,698	14,313,024	43,673	10,568,866	158,624,849
1948	55,950	20,030,100	41,490	11,036,340	149,763,677
1949	53,072	16,770,752	40,670	10,086,160	121,649,828

Ore sold or treated in Utah in 1949, with content in terms of recovered metals

Source	Mines producing	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)
Dry and siliceous gold ore	5	4,726	1,531	4,509
Dry and siliceous gold-silver ore	16	93,035	5,541	260,093
Dry and siliceous silver ore	19	73,874	1,576	398,558
Copper ore	13	20,924,274	267,891	2,233,708
Lead ore	39	20,304	907	114,120
Zinc ore	3	1/ 33,705	88	12,061
Zinc-lead ore	38	842,441	36,442	3,677,733
Zinc-lead-copper ore	3	1,108	70	24,098
Total lode mines	2/ 93	21,993,467	314,046	6,724,880
Placers	2	-	12	-
Total: 1949	95	21,993,467	314,058	6,724,880
1948	120	25,741,911	368,422	8,045,329

Source	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore	34,595	51,793	3,792
Dry and siliceous gold-silver ore	585,096	2,937,414	2,113
Dry silver ore	203,620	1,701,556	-
Copper ore	3/390,243,978	32,075	-
Lead ore	60,759	2,853,437	155,700
Zinc ore	106,632	514,590	2,167,606
Zinc-lead ore	3,195,053	97,861,774	78,833,330
Zinc-lead-copper ore	60,267	191,361	177,459
Total lode mines	3/394,490,000	106,144,000	81,340,000
Placers	-	-	-
Total: 1949	3/394,490,000	106,144,000	81,340,000
1948	4/454,014,000	111,900,000	82,980,000

1/ Includes 17,480 tons of zinc slag.
2/ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.
3/ Includes 15,822,418 pounds recovered from mine-water precipitates.
4/ Includes 15,658,743 pounds recovered from mine-water precipitates.

Mine production of gold, silver, copper, lead, and zinc in Utah and in the chief mining districts of Utah, 1948-49, in terms of recovered metals

District	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
West Mountain (Bingham) district:							
1948	24,889,134	332,588	4,694,674	450,450,800	61,343,900	44,153,300	$130,490,268
1949	21,405,489	286,155	4,316,378	392,201,000	65,199,300	44,621,200	107,020,080
Park City region:							
1948	506,671	19,087	1,703,864	1,193,300	25,339,400	20,639,700	9,749,907
1949	318,341	19,443	1,061,902	902,500	17,166,800	16,718,800	6,604,858
Tintic district:							
1948	175,897	11,007	1,123,460	1,002,800	11,939,400	7,360,200	4,735,701
1949	160,448	5,133	914,153	525,900	13,350,800	12,163,300	4,728,346
Remaining districts:							
1948	170,209	5,740	523,331	1,367,100	13,277,300	10,826,800	4,787,801
1949	109,189	3,327	432,447	860,600	10,427,100	7,836,700	3,296,544
Total Utah:							
1948	25,741,911	368,422	8,045,329	454,014,000	111,900,000	82,980,000	149,763,677
1949	21,993,467	314,058	6,724,880	394,490,000	106,144,000	81,340,000	121,649,828

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORTS
M.M.S. No. 1854

TUNGSTEN IN 1949

A substantial decline in the outputs of high-speed steels and tungsten powder and smaller exports of ferrotungsten in 1949 were largely responsible for a 44-percent drop in consumption of tungsten concentrates, according to the Bureau of Mines, United States Department of the Interior. Shipments of Class A (1.8 to 6 percent W) and Class B (19 to 22 percent W) high-speed steels declined 55 and 44 percent from 1948, production of tungsten powder was about one-third less, and exports of ferrotungsten dropped 51 percent. To conform to the lessened demand, some domestic mines suspended operations and the production rates at most of the others were reduced. As a consequence, domestic output and shipments of tungsten concentrates decreased 28 and 31 percent, respectively, and imports for consumption by industry declined 51 percent. Quotations on imported ores and concentrates were substantially less than in 1948.

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Production and shipments of tungsten concentrates were 3,043 and 2,765 short tons (60 percent WO_3 basis), respectively, in 1949, decreases of 28 and 31 percent from 1948. Output in 1949 was obtained from many widely scattered operations in 9 States and Alaska, but 3 States - California, Nevada, and North Carolina - supplied 86 percent of the total, and 7 operators - Bradley Mining Co., Climax Molybdenum Co., Nevada-Massachusetts Co., Nevada Scheelite, Inc., Surcease Mining Co., Tungsten Mining Corp., and United States Vanadium Corp. - produced 92 percent of the United States total. California was again the premier tungsten-producing State and North Carolina displaced Nevada as the second largest.

Prepared by Hubert W. Davis under the supervision of Robert H. Ridgway, Chief, Ferrous Metals and Alloys Branch, Minerals Division.

Tungsten concentrates produced and shipped in the United States, 1948-49, by States

State	Produced				Shipped from mines			
	1948		1949		1948		1949	
	Short tons 60 percent WO_3	Units	Short tons 60 percent WO_3	Units	Short tons 60 percent WO_3	Units	Short tons 60 percent WO_3	Units
Alaska....	1	85	(1)	15	-	-	-	-
Arizona...	23	1,388	(2)	22	23	1,388	(2)	22
California	1,779	106,765	1,083	64,980	1,767	106,006	952	57,135
Colorado..	198	11,854	220	13,217	208	12,463	222	13,311
Idaho.....	2	117	187	11,239	86	5,201	66	3,951
Missouri..	8	484	-	-	4	242	2	117
Montana...	3/28	3/1,663	9	554	3/28	3/1,663	9	554
Nevada....	1,254	75,245	598	35,855	949	56,929	740	44,405
North Carolina	942	56,522	942	56,484	965	57,924	770	46,216
Oregon....	-	-	3	173	-	-	3	173
Utah......	3	146	1	31	3	146	1	31
	3/4,238	3/254,269	3,043	182,570	4,033	241,962	2,765	165,915

1/ 500 pounds. 2/ 744 pounds. 3/ Revised figures.

Consumption of tungsten concentrates in the United States was about 5,200 short tons (60 percent WO_3 basis) in 1949 compared with 9,300 tons in 1948.

General imports (receipts) of tungsten ores and concentrates into the United States totaled 7,357,299 pounds (tungsten content), equivalent to 7,731 short tons of 60 percent WO_3 in 1949, a 25-percent decline from 1948. This quantity represents the ores and concentrates received in the United States, irrespective of final disposition. Although ores and concentrates were received from 13 foreign countries in 1949, four countries - Bolivia (14 percent), China (68 percent), Korea (4 percent), and Siam (8 percent) - supplied 94 percent of the total.

Tungsten ores and concentrates imported into the United States, 1948-49, by countries

[U. S. Department of Commerce]

Country	General imports		Imports for consumption		
	Gross weight (pounds)	Tungsten content (pounds)	Gross weight (pounds)	Tungsten content (pounds)	Value
1948					
Argentina	16,174	8,261	16,174	8,261	$12,058
Australia	164,051	87,974	6,782	3,629	3,435
Belgian Congo	199,816	110,758	209,922	116,417	122,937
Bolivia	2,032,778	663,765	1,963,958	664,987	634,492
Brazil	1,546,394	856,834	1,517,649	847,557	912,723
British East Africa	20,539	11,337	20,539	11,337	14,824
Canada	583,195	337,878	631,030	363,391	432,182
Chile	-	-	76,796	40,641	39,041
China	9,186,480	4,893,328	6,964,372	3,699,850	3,827,676
French Indochina and French India	803,360	178,401	-	-	-
Japan	55,115	28,345	135,662	71,095	68,311
Korea (Chosen)	3,598,789	1,723,275	1,813,771	980,765	947,062
Mexico	314,370	151,492	289,422	153,432	166,600
Peru	-	-	470	271	220
Portugal	24,125	10,207	25,873	12,240	8,807
Siam	809,333	393,054	693,748	379,883	366,481
Southern Rhodesia	77,840	31,136	25,406	12,728	12,795
Spain	503,416	261,791	580,466	181,617	207,617
	19,935,769	9,748,336	14,972,040	7,548,101	7,777,261
1949					
Australia	113,120	64,480	138,547	77,893	103,130
Belgian Congo	172,092	94,647	172,115	94,684	90,238
Bolivia	2,945,972	1,044,982	372,118	210,743	206,687
Brazil	115,530	64,496	221,138	120,640	136,496
Burma	142,797	72,737	10,278	5,862	5,139
China	9,509,713	4,960,427	8,750,628	4,548,046	4,164,729
French Indochina and French China	-	-	607,781	152,371	148,807
Japan	-	-	342	186	65
Korea	634,530	322,555	888,706	497,441	475,222
Mexico	167,768	84,239	66,724	21,358	23,711
Netherlands	6,081	3,456	6,081	3,456	3,341
Peru	55,124	31,074	57,555	32,619	19,438
Portugal	340	154	308	176	154
Siam	1,184,253	572,461	782,413	383,612	455,263
Southern Rhodesia	-	-	85,653	1,542	1,815
Spain	72,245	41,591	231,336	123,473	122,012
	15,119,565	7,357,299	12,391,723	6,274,102	5,956,247

Imports of ores and concentrates for consumption in the United States were 6,274,102 pounds (tungsten content), equivalent to 6,592 short tons of 60 percent WO_3 in 1949, a decline of 17 percent from 1948. Imports for consumption represent ores and concentrates on which the duty has been paid and which have thereby entered into the domestic commerce of the United States and concentrates which enter duty free for the United States Government. China (73 percent), Korea (8 percent), and Siam (6 percent) supplied 87 percent of the total. Of the total imports, 3,562 tons (60 percent WO_3) from China were duty-free for the United States Government.

In 1949, 434 short tons (60 percent WO_3) of ores and concentrates were withdrawn from warehouses for smelting, refining, and export (972 tons in 1948), and 939 tons (gross weight) were reexported (391 tons in 1948). Ores and concentrates withdrawn for smelting, refining, and export and for reexport are free of duty.

Exports of tungsten ore and concentrates were 102 short tons (gross weight) in 1949, of which 55 tons went to Italy, 30 tons to United Kingdom, and 17 tons to Germany.

In 1949 quotations on imported ores and concentrates ranged from $25 to $18 a short-ton unit of WO_3, duty paid, and domestic scheelite of good known analysis, in carlots, delivered at $28.50 a unit.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary   JAMES A. BOYD, Director

FOR RELEASE JUNE 6, 1950.

MINERAL MARKET REPORTS
MMS NO. 1855.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN WYOMING, 1949 - FINAL ANNUAL FIGURES

In 1949 mines in Wyoming produced 389 fine ounces of gold, valued at $13,615, and 21 fine ounces of silver, valued at $19, according to the Denver Office of the Bureau of Mines, United States Department of the Interior. In 1948 the output was 115 ounces of gold, worth $4,025, and 11 ounces of silver, worth $10. Nearly all the output in both years came from the Carissa mine in the South Pass district, Fremont County. This mine had a substantial output in 1947 and was under development, with intermittent production, in 1948 and 1949. A little placer gold was recovered in Teton County. No Wyoming output of copper, lead, or zinc was reported in 1949 or 1948. The prices used in both years for gold and silver were $35 and $0.9050505, respectively, an ounce.

Mine production of gold and silver in Wyoming, 1949, by months, in terms of recovered metals

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Month	Gold (fine ounces)	Silver (fine ounces)
January-February	–	–
March	2	–
April	98	5
May	56	3
June	–	–
July	59	3
August	121	7
September	10	1
October	35	2
November	8	–
December	–	–
Total: 1949	389	21
1948	115	11

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

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UNITED STATES DEPARTMENT OF THE INTERIOR

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FOR RELEASE JUNE 5, 1950.

MINERAL MARKET REPORT
MMS NO. 1856

SLATE PRODUCTION DECREASED MODERATELY IN 1949

The domestic output of slate in 1949 fell below the production of the previous year. According to figures compiled by the Bureau of Mines, United States Department of the Interior, from reports furnished by the slate producers the production amounted to 740,260 short tons valued at $12,164,276. These totals represent decreases of 7 percent in tonnage and 6 percent in value.

Sales of roofing slate during the year amounted to 181,490 squares (218,650 squares in 1948) valued at $3,759,564 ($4,566,056 in 1948). The average value per square in 1949 was $20.71, off 17 cents from the previous average. In the principal roofing-slate centers, only Virginia registered a gain in sales of this commodity.

In contrast with roofing slate, production of mill stock exceeded by a slight margin the output of 1948. Sales of mill stock amounted to $1,727,849 - an increase of 8 percent. Production of electrical slate, grave vaults and covers, billiard-table tops, and school slates declined whereas the output of structural and sanitary slate, and blackboards and bulletin boards increased substantially.

Flagstones, including slate used for walkways, stepping stones, and miscellaneous uses, showed an increase of 30 percent in value over the previous year.

The production of granules and flour totaled 608,270 short tons valued at $5,764,560 - a decrease of 8 percent quantitywise and 4 percent in value.

There were 80 producers operating in 1949 - 3 less than in 1948. 27 were in Vermont; 26 in Pennsylvania; 16 in New York; 5 in Virginia; 2 in California and one each in Arkansas, Georgia, Maine and Maryland.

The accompanying table presents the salient statistics of the industry for the past two years.

Prepared by D. G. Runner and M. G. Downey, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

Salient statistics of the slate industry in the United States, 1948-49

	1948			1949			Percent of change in --	
	Quantity			Quantity				
	Unit of measurement	Approximate equivalent short tons	Value	Unit of measurement	Approximate equivalent short tons	Value	Quantity (unit as reported	Value
Domestic production (sales by producers):	Squares			Squares				
Roofing slate ----------------	218,650	82,090	$4,566,056	181,490	68,260	$3,759,564	-17	-18
Mill stock:	Sq. ft.			Sq. ft.				
Electrical slate ---------	373,250	2,800	451,459	242,700	1,760	323,574	-35	-28
Structural and sanitary slate ----------------	618,810	5,120	465,386	806,790	6,390	627,936	+30	+35
Grave vaults and covers -	24,460	210	16,292	15,460	140	12,687	-37	-22
Blackboards and bulletin boards----------------	928,340	2,020	535,254	1,145,080	2,840	649,451	+23	+21
Billiard-table tops -----	193,450	1,430	118,592	164,100	1,200	100,203	-15	-16
School slates -----------	1/402,940	370	13,036	1/366,910	400	13,798	-9	+6
Total mill stock ------	2,541,250	11,950	1,600,019	2,741,040	12,730	1,727,649	+8	+8
Flagstones, etc. 2/	6,712,920	46,490	700,477	7,945,120	51,000	912,503	+18	+30
Total slate as dimension stone ----------------	--------	140,530	6,866,552	--------	131,990	6,399,716	-6	-7
Granules and Flour ------	--------	658,870	6,014,377	--------	608,270	5,764,560	-8	-4
Grand total domestic production ---------------	--------	799,400	12,880,929	--------	740,260	12,164,276	-7	-6

1/ Square feet approximate. Number of pieces: 1948, 751,760; 1949, 682,270.

2/ Includes slate used for walkways, stepping stones, and miscellaneous uses.

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE JUNE 9, 1950.

MINERAL MARKET REPORT
MMS NO. 1857

IRON BLAST-FURNACE SLAG OUTPUT SHOWS A MODERATE INCREASE IN 1949

A new record output of 21,581,379 short tons valued at $24,578,712 was established by the iron blast-furnace slag processing industry in 1949. These figures were obtained from a canvass conducted by the National Slag Association in cooperation with the Bureau of Mines, United States Department of the Interior. Included is the output of 66 plants (41 companies) processing air-cooled slag and 10 plants (7 companies) processing expanded slag.

Screened air-cooled slag, the major product, amounted to 17,769,330 short tons valued at $21,090,445. Of this total 15,879,737 short tons, or 89 percent, were used as railroad ballast, aggregate for portland cement concrete, in bituminous and for other types of highway construction. The manufacture of mineral wool and the use for roofing, concrete block, airport construction, agricultural, sewage trickling filter medium, and miscellaneous uses consumed the balance.

Unscreened air-cooled slag processed during the year totaled 727,595 short tons valued at $372,727, both slightly in excess of the 1948 figures. As in former years, this material was consumed in highway construction (other than in portland-cement concrete and bituminous construction), railroad ballast, and for other uses.

The amount of granulated slag processed in 1949 increased substantially while expanded slag declined, in comparison with 1948 totals. The consumption of granulated slag amounted to 1,885,428 short tons, about half of which was used in the manufacture of hydraulic cement. Slag processed as lightweight aggregate amounted to 1,199,026 short tons - 11 percent below the 1948 total.

Iron blast-furnace slag is produced in many States, but most of the material is processed in the steel centers of Ohio, Pennsylvania, Alabama, and Illinois. As in 1948, Ohio again was the largest single producer of air-cooled slag.

The bulk of iron blast-furnace slag is shipped by rail and truck. The railroads handled 47 percent in 1949 (54 percent in 1948) whereas truck shipments amounted to 51 percent (45 percent in 1948). The balance, or 2 percent, was transported via waterway.

The recovery of iron by processors amounted to 206,470 short tons - off about 5 percent from the previous year's figure.

Prepared by D. G. Runner, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

A total of 5,169,600 man-hours were expended by 2,134 plant and yard employees in the production of commercial slag during 1949. These totals represent a decrease in the number of man-hours utilized and a slight increase in the number of plant and yard employees. These figures exclude those employees assigned to administrative and sales activities.

Salient statistics on the industry are shown in accompanying tables.

Air-cooled iron blast-furnace slag sold or used by processors in the United States, by uses, in 1949
(National Slag Association)

Use	Screened		Unscreened	
	Short tons	Value	Short tons	Value
Aggregate in:				
Portland-cement concrete construction	1,842,381	$2,272,912	....	....
Bituminous construction (all types)..	4,278,417	5,466,366	....	....
Highway construction 1/.............	5,982,195	7,633,776	320,277	$163,673
Airport construction 1/	136,485	166,704	....	....
Manufacture of concrete block........	719,823	836,391	....	....
Railroad ballast.....................	3,776,744	3,285,562	14,737	6,654
Mineral wool.........................	439,358	592,683	....	....
Roofing (built up and granules).......	208,391	346,454	....	....
Sewage trickling filter medium	41,711	63,737	....	....
Agricultural slag, liming............	41,444	58,520	....	....
Other uses...........................	302,381	367,340	392,581	202,400
	17,769,330	21,090,445	727,595	372,727

1/ Other than in portland-cement concrete and bituminous construction.

Granulated and expanded iron blast-furnace slag sold or used by processors in the United States, by uses, in 1949
(National Slag Association)

Use	Granulated		Expanded	
	Short tons	Value	Short tons	Value
Road fill, etc.......................	559,187	$193,453	....	....
Agricultural slag, liming...........	35,923	42,030	....	....
Manufacture of hydraulic cement......	927,383	(1/)	....	....
Aggregate for concrete block manufacture...........................	78,865	85,924	1,199,026	$2,698,908
Other uses..........................	284,070	95,225	....	....
	1,885,428	2/416,632	1,199,026	2,698,908

1/ Data not available.

2/ Excludes value of slag used for cement manufacture.

Average value per short ton of iron blast-furnace slag sold or used by processors in the United States, by uses, in 1949

(National Slag Association)

Use	Air-cooled		Granulated	Expanded
	Screened	Unscreened		
Aggregate in:				
Portland-cement concrete construction	$1.23	.....	.....	.....
Bituminous construction (all types)	1.27	.....	.....	.....
Highway construction 1/	1.28	$.51	.....	.....
Airport construction 1/	1.22	.....	.....	.....
Manufacture of concrete block	1.16	.....	$1.09	$2.25
Railroad ballast	.87	.45	.....	.....
Mineral wool	1.34	.....	.....	.....
Roofing (built-up and granules)	1.66	.....	.....	.....
Sewage trickling filter medium	1.52	.....	.....	.....
Agricultural slag, liming	1.41	.....	1.17	.....
Road fill, etc	.....	.....	.34	.....
Other uses	1.21	.51	.33	.....

1/ Other than in portland-cement concrete and bituminous construction.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary** JAMES BOYD, **Director**

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORTS
M. M. S. No. 1858

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

NICKEL IN 1949

The two-year upward trend in consumption of nickel in the United States was reversed in 1949, largely because of marked declines in outputs of nickel-alloy and stainless steels and copper-nickel alloys, according to the Bureau of Mines, United States Department of the Interior. Total consumption of nickel in 1949 was 27 percent smaller than in 1948, which, however, was a peacetime record. However, deliveries to the National Stockpile were much greater. Despite the much smaller consumption, output of nickel in Canada, the chief producing country, declined only 3 percent in 1949 from 1948. The drop in sales of Canadian nickel, however, was more pronounced. Imports of nickel into the United States were 5 percent less in 1949 than in 1948. Receipts of nickel from Canada dropped 6 percent, but this decline was partly offset by an increase of 22 percent in imports from Norway. Production of nickel matte and ferronickel in New Caledonia was hampered by an inadequate supply of ore. Domestic output of nickel was, as heretofore, small in 1949.

Total consumption of nickel was 136,652,228 pounds in 1949, of which about 37 percent was utilized in stainless and other steels. Usage of nickel in stainless steel was 27 percent less than in 1948, but that for other steels was 38 percent smaller. Consumption of nickel in high-temperature and electrical resistance alloys was down 34 percent but that for anodes dropped only 3 percent. The use of nickel in cast irons declined 19 percent from 1948. Most of the nickel consumed in 1949 was in the form of new metal; proportionately less oxide and oxide sinter were used than in 1948.

The data in the tables on consumption cover all known consumers of nickel in the form of primary, secondary, matte, and oxide. The figures for nickel salts, however, fall short of the total and probably represent only 42 percent of the totals in 1949 and 1948.

Prepared by Hubert W. Davis under the supervision of Robert H. Ridgway, Chief, Ferrous Metals and Alloys Branch, Minerals Division.

Nickel (exclusive of purchased and home scrap) consumed and in stock in the United States, 1948-49, by forms, in pounds of contained nickel

Form	Stocks at consumers' plants Dec. 31, 1948	Consumption		Stocks at consumers' plants Dec. 31, 1949
		1948	1949	
Primary 1/..............	2/14,821,331	130,911,216	99,377,479	12,473,528
Oxide and oxide sinter.	3,898,439	33,052,564	19,514,759	2,184,431
Matte.................	2,119,330	21,238,604	15,654,621	2,908,419
Salts.................	2/ 443,786	1,914,134	2,105,369	301,822
	2/21,282,886	187,116,518	136,652,228	17,868,200

1/ Includes secondary nickel (ingot or shot remelted from scrap nickel and scrap nickel alloys).
2/ Revised figure.

Nickel (exclusive of purchased and home scrap) consumed in the United States, 1948-49, by uses

Use	Pounds of nickel	
	1948	1949
Ferrous:		
Stainless steels..................................	32,487,815	23,817,187
Other steels......................................	43,564,600	26,948,418
Cast irons..	8,431,667	6,792,472
Nonferrous (comprises copper-nickel alloys, nickel-silver, brass, bronze, beryllium, magnesium, and aluminum alloys, and Monel, Inconel, and malleable nickel)............................	56,067,736	37,942,549
High temperature and electrical resistance alloys..	12,336,123	8,107,918
Electroplating:		
Anodes:...	28,425,717	27,620,766
Solutions...	1,327,396	1,448,584
Catalysts...	1,190,851	994,206
Ceramics..	370,708	299,246
Other...	2,913,905	2,680,882
	187,116,518	136,652,228

Domestic production of nickel, as heretofore, was small in 1949; it was 1,581,000 pounds and comprised both crude and refined nickel sulfate recovered as a byproduct of copper refining. Shipments were 1,577,000 pounds, the bulk of which was crude nickel sulfate sold to refiners for use as an intermediate in the manufacture of refined nickel salts. In addition to the nickel recovered as a byproduct of copper refining in 1949, 4,618,000 pounds (nickel content) of refined nickel salts (chiefly sulfate) were produced in the United States from Canadian cobalt-nickel ore and nickel residues, from domestic crude nickel sulfate, and from nickel cathode, shot, and scrap. The total production of refined nickel salts in the United States was 5,125,000 pounds (nickel content) in 1949; shipments to consumers for electroplating, catalysts, and ceramics were 4,987,000 pounds.

Imports of nickel in all forms were 5 percent less in 1949 than in 1948. As heretofore, Canada was the chief source of the imports; it supplied 137,072,528 pounds of refined nickel, 22,256,644 pounds of roasted and sintered matte, 24,483,602 pounds of oxide and oxide sinter, and 224,632 pounds of nickel scrap. In 1949, Norway furnished 7,572,420 pounds of refined nickel and the United Kingdom 35,607 pounds of refined nickel and 2,406,474 pounds of nickel scrap. Germany furnished 344 pounds of refined nickel and Netherlands, Belgium-Luxembourg, Mozambique, and Libya 196,038, 29,485, 450, and 399 pounds, respectively, of nickel scrap.

The nickel content of the unmanufactured nickel products imported into the United States is estimated at 182,942,000 pounds in 1949, compared with 192,800,000 pounds (revised figure) in 1948.

Nickel products imported for consumption in the United States, 1948-49, by classes, in pounds
(Source: U. S. Department of Commerce)

Class	1948	1949
Nickel ore and matte	27,708,041	22,256,644
Nickel pigs, ingots, shot, cathode, etc	1/140,564,020	1/144,680,899
Nickel scrap	1/ 2,539,698	1/ 2,857,478
Nickel bars, rods, tubes, etc	31,012	8,826
Nickel oxide	43,028,224	24,483,602
Nickel silver or German silver in sheets, strips, rods and wire	7,754	----------

1/ Adjusted by Bureau of Mines.

Exports of nickel comprise largely products manufactured from imported raw materials. Exports of alloys and scrap (including Monel metal), which comprise the bulk of the foreign shipments, were 52 percent less in 1949 than in 1948; those of refined nickel, nickel-chrome electric-resistance wire, and nickel silver were 40, 8, and 19 percent, respectively, smaller. The United Kingdom (3,405,107 pounds) and Canada (2,646,415 pounds) were the chief foreign markets for refined nickel, Monel metal, alloys, and scrap in 1949.

Nickel products exported from the United States, 1948-49, by classes, in pounds
(Source: U. S. Department of Commerce)

Class	1948	1949
Ore, concentrates, and matte	1,500	116,000
Alloys and scrap containing nickel (including Monel metal)	11,652,796	5,568,949
Metal in ingots, bars, sheets, etc	2,705,777	1,610,329
Nickel-chrome electric resistance wire	747,082	686,270
Nickel silver or German silver, crude, scrap, bars, rods, etc	1,260,330	1,024,613

Since July 22, 1948, the contract price to United States buyers for electrolytic nickel in carlots f.o.b. Port Colborne, Ontario, has been 40 cents a pound, including duty of 1¼ cents a pound; and for nickel oxide sinter (on which there is no duty) f.o.b. Copper Cliff, Ontario, 36¼ cents (nickel content) a pound.

Canada. - Production of nickel in Canada was 128,328 short tons in 1949 compared with 131,740 tons in 1948. Exports of nickel from Canada were 127,141 short tons in 1949 compared with 131,840 tons in 1948.

New Caledonia. - Only two nickel concessions - Pin-Pin at Moindah, 130 miles north of Noumea, and the Thio Group at Thio, on the east coast, both belonging to La Société le Nickel - were in production in 1949. However, the Pin-Pin concession discontinued operation in April. Output of ore was 93,870 metric tons and comprised 91,730 tons averaging 3.5 percent nickel at the Thio Group and 2,140 tons averaging 7.5 percent at the Pin-Pin concession. Output of ore in 1949 was inadequate to pace consumption and, as a consequence, only one blast furnace, one electric furnace, and two Bessemer converters were operated.

Production of matte was 3,950 metric tons averaging 77 percent nickel in 1949 (2,208 tons in 1948). Production of ferronickel was 1,936 metric tons averaging 37 percent nickel in 1949 (4,049 tons in 1948).

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JUNE 9, 1950.

MINERAL MARKET REPORTS
MMS NO. 1859

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN OREGON, 1949 - FINAL ANNUAL FIGURES

Oregon gold production in 1949, owing principally to expanded dredge output exceeded the 1948 level by 11 percent, but remained considerably below the post-war peak of 18,979 ounces attained in 1947, according to the San Francisco Office of the Bureau of Mines, United States Department of the Interior. Silver production in 1949 fell 10 percent below the relatively small yield of the metal in 1948. Renewed interest in exploiting the State ores for base metals in 1949 resulted in a small zinc production - the first reported since 1947 - a tenfold increase in copper production and a 71 percent increase in the yield of lead compared with the respective minor outputs of the two metals in 1948. The total value of the five metals in 1949 was $592,107, an increase of 12 percent over $527,064 in 1948.

The value of the metal production herein reported has been calculated at the following prices (corresponding prices for 1948 are shown in parentheses): Gold, $35 per fine ounce ($35); silver, $.9050505 per fine ounce ($.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); zinc, $0.124 per pound ($0.133).

The principal producers of gold, silver, copper, lead, and zinc in Oregon in 1949 were: Placer gold, Baker Dredging Co., Sumpter district, Baker County and Porter & Co., Granite district, Grant County; lode gold, Bartels Bros. Mining Co., Champion mine, Bohemia district, Lane County (also the State leading copper producer); lead and zinc, Helena Mines, Inc. and Harold Barton, lessee, Helena and Musick mines, Bohemia district, Lane County.

Grant County, due principally to dredging, was the largest contributor to the 1949 metal-mining output in the State being followed in second place by Baker County.

Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Oregon, 1949, by counties in terms of recovered metals

County	Mines producing		Gold (fine ounces)		Silver 1/ (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
	Lode	Placer	Lode	Placer				
Baker..........	9	6	185	5,774	2,880	400	–	–
Curry..........	2	–	20	–	4	–	–	–
Douglas........	2	2	32	9	10	–	–	–
Grant & Wheeler 2/....	3	8	695	8,374	5,365	800	6,600	–
Jackson........	4	4	76	96	30	–	–	–
Josephine......	5	8	36	205	52	5,800	–	–
Lane...........	3	–	717	–	3,853	33,000	17,400	12,000
Malheur........	–	1	–	5	1	–	–	–
Union..........	–	(3)	–	2	–	–	–	–
Total: 1949..	28	29	1,761	14,465	12,195	40,000	24,000	12,000
1948..	23	38	2,089	12,522	13,596	4,000	14,000	–

1/ Includes silver from lode and placer mines.
2/ Combined to avoid disclosure of individual output.
3/ From property not classed as a mine.

Mine production of gold and silver in Oregon, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)
January..............................	303	272
February.............................	247	43
March................................	862	181
April................................	1,552	296
May..................................	1,406	246
June.................................	2,011	716
July.................................	1,343	2,182
August...............................	2,198	2,075
September............................	1,509	1,920
October..............................	1,701	2,052
November.............................	1,653	946
December.............................	1,441	1,266
Total: 1949....................	16,226	12,195

Ore sold or treated in Oregon in 1949, with content in terms of recovered metals

Source	Ore 1/ (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore.........	6,122	1,758	9,035	33,900	24,000	12,000
Siliceous silver ore..............	47	1	431	300	–	–
Copper ore........................	46	2	22	5,800	–	–
Total, lode mines..........	6,215	1,761	9,488			
Placers...........................	–	14,465	2,707			
Total: 1949..............	6,215	16,226	12,195	40,000	24,000	12,000
1948..............	3,119	14,611	13,596	4,000	14,000	–

1/ Includes 472 tons of old tailings in 1949, and 16 tons in 1948.

Mine production of gold, silver, copper, lead, and zinc in Oregon, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper		Lead		Zinc		Total value
	Fine ounces	Value	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
1945.........	4,467	$156,345	10,461	$7,439	1	$270	1	$172	1	$230	$164,456
1946.........	17,598	615,930	6,927	5,597	7	2,268	2	436	–	–	624,231
1947.........	18,979	664,265	30,379	27,493	14	5,880	12	3,456	1	242	701,336
1948.........	14,611	511,385	13,596	12,305	2	868	7	2,506	–	–	527,064
1949.........	16,226	567,910	12,195	11,037	20	7,880	12	3,792	6	1,488	592,107

Tin-plate scrap imported into the United States, by countries 1948 & 1949 (long tons). 1/

Country	1948	1949
Algeria	430	490
Australia	7,558	10,932
Bolivia	-	60
Br. E. Africa	200	31
Canada	22,693	19,914
China	25	400
Cuba	1,303	1,065
French Morocco	3,022	1,502
Ireland	-	231
Italy	-	15
Malaya	80	20
New Zealand	593	1,459
Portugal	390	-
Sweden	11	729
Turkey	219	197
Union of South Africa	3,825	3,983
United Kingdom	735	-
	41,084	41,028

1/ Source: Bureau of the Census

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE JUNE 1950

MINERAL MARKET REPORT
M.M.S. NO. 1860

LIST OF MANUFACTURERS OF MACHINERY USED IN MAKING FUEL BRIQUETS AND PACKAGED FUEL

In response to numerous inquiries for information on manufacture of fuel-briquetting and packaged-fuel machinery, the Bureau of Mines has compiled the following list. The list includes only those firms who responded to the Bureau's recent annual canvass for information on sales of equipment to the fuel-briquetting and packaged-fuel industries. The list is limited to companies engaged in the manufacture of dryers, presses, wrapping machines, or other machinery specifically used at the plant in the manufacture or wrapping of these products.

The Bureau of Mines appreciates the cooperation of these manufacturers but assumes no responsibility for these listings or the merits of their product. Additional names will be added to the list upon request.

MAKING FUEL-BRIQUET EQUIPMENT

Komarek-Greaves & Co.
2939-45 North Mozart St.
Chicago 18, Ill.

Vulcan Iron Works
Process Equipment Division
Wilkes-Barre, Pa.

The Webb Corporation
Webb City
Missouri

MAKING PACKAGED-FUEL EQUIPMENT

Chisholm, Boyd & White Co.
57th and Wallace Streets
Chicago 21, Ill.

C. M. Eberling
6002 Ellen Avenue
Cleveland 2, Ohio

Package Machinery Co.
Springfield 7
Massachusetts

MAKING BOTH FUEL-BRIQUET AND PACKAGED-FUEL EQUIPMENT

Fernholtz Machinery Co.
150 North Norton Avenue
Los Angeles 4, Calif.

Glenn Smith
Riley Road & Canal St.
East Chicago, Indiana

Hardinge Company, Inc.
York
Pennsylvania

Johnson Process
16845 Plainview Road
Detroit 19, Michigan

Prepared by Carribel Rockwell and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Economics and Statistics Division.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

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FOR RELEASE JUNE 1950

MINERAL MARKET REPORT
M.M.S. NO. 1861

DIRECTORY OF FUEL-BRIQUETTING OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949

(Directory of packaged-fuel operations issued separately)

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
EASTERN STATES:				
Massachusetts	STAPLES COAL CO. ------------ 80 Federal St. Boston 10, Mass.	Fall River-	1932	Pa. anthracite and bituminous low-volatile
Pennsylvania	AMERICAN BRIQUET CO. -------- 1417 Sansom St. Philadelphia 2, Pa.	Lykens ----	1919	Pa. anthracite
Do ------	ECCO MANUFACTURING CO. ------ 1417 Sansom St. Philadelphia 2, Pa.	Pine Grove-	1944	Pa. anthracite
Do ------	READING BRIQUET CO. --------- 1417 Sansom St. Philadelphia 2, Pa.	Locust Summit	1946	Pa. anthracite + small amount bituminous
Do ------	READING BRIQUET CO. --------- 1417 Sansom St. Philadelphia 2, Pa.	St.Nicholas	1946	Pa. anthracite + small amount bituminous
West Virginia	BERWIND FUEL CO. ------------ 141 West Jackson Boulevard Chicago 4, Ill.	Berwind ---	1929	Bituminous low-volatile
Do -------	CHICAGO BRIQUET CO. 1/ --------- Riley Road & Canal Street East Chicago, Ind.	McComas ---	1949	Bituminous low-volatile
Do -------	COAL PROCESSING CORP. ------- 230 South Clark St. Chicago 4, Ill.	Glen Rogers	1932	Bituminous low-volatile
CENTRAL STATES:				
Arkansas ----	ARKO BRIQUETTES, INC. ------- P. O. Box 151 Fort Smith, Ark.	Fort Smith-	1948	Semianthracite

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1/ Prepared by Carribel Rockwell and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Economics and Statistics Division.

DIRECTORY OF FUEL-BRIQUETTING OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949--Continued

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
CENTRAL STATES--Continued				
Arkansas--Continued				
Do	DIXIE MODERN COAL CO. 200 South 7th St. Fort Smith, Ark.	Fort Smith	1935	Semianthracite
Illinois	CHICAGO BRIQUET CO. Riley Rd. & Canal St. East Chicago, Ind.	Chicago	1937	Petroleum coke and bituminous low-volatile
Do	COAL PROCESSING CORP. 230 South Clark St. Chicago 4, Ill.	Buckner	1941	Bituminous high-volatile
Kansas	ACME BRIQUETS, INC. 1129 South Mill St. Kansas City 3, Kans.	Kansas City	1946	Arkansas hard coals
Do	FORT SCOTT BRIQUETTE CO., INC. 1½ North Main Fort Scott, Kans.	Fort Scott	1946	Semianthracite
Michigan	JOHNSON COAL CUBING CO., INC. 9309 Hubbell Ave. Detroit 28, Mich.	Detroit	1939	Pa. anthracite and bituminous low-volatile
Do	UNITED ICE & FUEL CO. 2202 North Dort Highway Flint 7, Mich.	Flint	1946	Pa. anthracite and bituminous high- and low-volatile
Missouri	ST. LOUIS BRIQUETTE CO. 3183 Morganford Road St. Louis 16, Mo.	St. Louis	1942	Semianthracite
Do	UNIVERSAL COAL WASHING CO.(LESSEE) 230 North Michigan Ave. Chicago 1, Ill.	Kansas City	1909	Arkansas hard coals
Nebraska	OMAHA COKE & COAL BLOX CO. 31st Ave. & Paxton Blvd. Omaha 11, Nebr.	Omaha	1932	Petroleum coke and semianthracite
North Dakota	DAKOTA BRIQUETS & TAR PRODUCTS, INC.[2] Dickinson, N. Dakota	Dickinson	1929	Lignite char
Wisconsin	BERWIND FUEL CO. 141 West Jackson Boulevard Chicago 4, Ill.	Superior	1912	Bituminous low-volatile and Pa. anthracite
Do	COAL PROCESSING CORP. 230 South Clark Street Chicago 4, Ill.	Superior	1935	Bituminous low-volatile and Pa. anthracite
Do	HAAS COAL & DOCK CO.[3] 5133 Sixth Ave. Kenosha, Wis.	Kenosha	1937	Bituminous low-volatile and sm[illegible] amount of Pa. anthracite

DIRECTORY OF FUEL-BRIQUETTING OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949--Continued

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
CENTRAL STATES--Continued				
Wisconsin--Continued				
Do ------	ARTHUR KUESEL COAL CO. -------- 794 North Water Street Milwaukee 2, Wis.	Milwaukee--	1948	Bituminous low-volatile and Pa. anthracite
Do ------	THE C. REISS COAL CO. --------- Reiss Bldg. Sheboygan, Wis.	Ashland----	1931	Bituminous low-volatile and Pa. anthracite
Do ------	THE C. REISS COAL CO. --------- Reiss Bldg. Sheboygan, Wis.	Green Bay--	1936	Bituminous low-volatile and Pa. anthracite
Do ------	THE C. REISS COAL CO. --------- Reiss Bldg. Sheboygan, Wis.	Sheboygan--	1933	Bituminous low-volatile and Pa. anthracite
Do ------	STOTT BRIQUET CO., INC. ------- 2196 University Ave. St. Paul 4, Minn.	Superior---	1909	Pa. anthracite, bituminous low-volatile, and petroleum coke
Do ------	UBBINK FUEL & DOCK CO. -------- 108 South Wisconsin Ave. Port Washington, Wis.	Port Washington	1936	Bituminous low-volatile and Pa. anthracite
Do ------	THE UNITED COAL & DOCK CO. ---- 700 West Wisconsin Ave. Milwaukee 3, Wis.	Milwaukee--	1928	Bituminous low-volatile and Pa. anthracite
PACIFIC COAST STATES:				
California--	SHELL CHEMICAL CORPORATION ---- 50 West 50th Street New York 20, N. Y.	Pittsburg--	1937	Residual carbon from pyrolysis of natural gas
Oregon -----	PORTLAND GAS & COKE CO. ------- Public Service Bldg. Portland 4, Oreg.	Portland---	1913	Residual carbon from manufacture of oil gas
Washington -	SEATTLE GAS CO. --------------- 1511 Fourth Ave. Seattle 11, Wash.	Seattle----	1938	Residual carbon from manufacture of oil gas

1/ New plant. Started operations June 1, 1949.
2/ Formerly Lehigh Briquet Co., Dickinson, N. Dakota.
3/ Formerly The Dunnebacke Co., Kenosha, Wis.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

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OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE JUNE 1950

MINERAL MARKET REPORT
M.M.S. NO. 1862

DIRECTORY OF PACKAGED-FUEL OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949 1/

(Directory of fuel-briquet operations issued separately)

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
EASTERN STATES:				
Virginia ----	C. M. PARRISH COAL CO., INC.- Allen Ave. & Marshall St. Richmond 20, Va.	Richmond ---	1938	Bituminous low-volatile and Pa. anthracite
Do ---------	WRIGHT COAL & OIL CO., INC. - 1019 W. 41st St. Norfolk 9, Va.	Norfolk ----	1935	Bituminous low-volatile
CENTRAL STATES:				
Illinois ----	CHICAGO PACKAGED FUEL CO. --- 5435 N. Wolcott Ave. Chicago, Ill.	Chicago ----	1948	Bituminous low-volatile
Do ---------	CRUMB-COLTON CO. ------------ 920 South Main St. Rockford, Ill.	Rockford ---	1937	Petroleum coke and bituminous low-volatile
Indiana -----	SUPERIOR COAL CO. ----------- 919 Wells St. Fort Wayne 7, Ind.	Fort Wayne -	1937	Bituminous low-volatile
Do ---------	WALTON COAL CO. ------------- 1506 South Anthony Blvd. Fort Wayne, Ind.	Fort Wayne -	1935	Bituminous low-volatile
Iowa --------	EDWARDS & BROWNE COAL CO. --- 1604 East 4th St. Sioux City, Iowa	Sioux City -	1938	Semianthracite
Michigan ----	ADRIAN CONCRETE PRODUCTS CO.- 329 Logan Street Adrian, Mich.	Adrian -----	1949	Bituminous low-volatile
Do ---------	WILL ARENS ------------------ 1040 Ohio St. Hancock, Mich.	Hancock ----	1941	Bituminous high- and low-volatile

Prepared by Carribel Rockwell and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Economics and Statistics Division.

DIRECTORY OF PACKAGED-FUEL OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949 -- Continued

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
CENTRAL STATES--Continued				
Michigan--Continued				
Do ----------	BARRON GRAIN & SUPPLY CO. --- 1013 Railroad St. Adrian, Mich.	Adrian -----	1948	Bituminous low-volatile
Do ----------	BLAESS COAL CO. ------------ 124 West Summit St. Ann Arbor, Mich.	Ann Arbor --	1937	Bituminous low-volatile
Do ----------	BRICKER BROTHERS ----------- 24581 Sherwood Ave. Center Line, Mich.	Center Line	1938	Bituminous low-volatile
Do ----------	ROBERT ERNST & SONS CO. ----- 8960 Hubbell Ave. Detroit 28, Mich.	Detroit ----	1946	Bituminous low-volatile
Do ----------	ESPER COAL CO. ------------- 2701 Michigan Ave. Detroit 16, Mich.	Detroit ----	1944	Bituminous low-volatile
Do ----------	JOHNSON COAL CUBING CO., INC. 9309 Hubbell Ave. Detroit 28, Mich.	Detroit ----	1932	Bituminous low-volatile
Do ----------	THE HURD-STERLING CO. ------- 15 West First St. Monroe, Mich.	Monroe -----	1936	Bituminous low-volatile
Do ----------	LEGION OIL AND COAL CO. ----- 1021 West Front St. Monroe, Mich.	Monroe -----	1945	Bituminous low-volatile
Do ----------	MILLER'S TANK CAR CO. ------- 12541 Grand River Detroit, Mich.	Detroit ----	1944	Bituminous low-volatile
Do ----------	NICHOLSON TERMINAL & DOCK CO. P.O. Box 66 River Rouge 18, Mich.	Ecorse -----	1939	Bituminous low-volatile
Do ----------	PACKAGE FUEL CO. INC. ------- 501 East Willard St. Kalamazoo 5, Mich.	Kalamazoo --	1936	Bituminous high-volatile
Do ----------	SPEAR AND SONS, INC. -------- 110 South Front Street Marquette, Mich.	Marquette --	1939	Bituminous low-volatile
Do ----------	UNITED ICE & FUEL CO. ------- 2202 North Dort Highway Flint 7, Mich.	Flint ------	1933	Bituminous high-volatile
Minnesota ----	COAL BLOX CO., INC. --------- 2501 Hiawatha Ave. Minneapolis 4, Minn.	Minneapolis--	1938	Bituminous low-volatile

DIRECTORY OF PACKAGED-FUEL OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949 -- Continued

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
CENTRAL STATES--Continued				
Minnesota--Continued				
Do	MINNEAPOLIS COAL CO. 74 Lowry Ave., N. Minneapolis 11, Minn.	Minneapolis	1935	Bituminous low-volatile and petroleum coke
Do	ST. PAUL PACKAGED FUEL CO. INC. 459 East 8th St. St. Paul 1, Minn.	St. Paul	1936	Bituminous low-volatile
Do	SIMONSON CASHWAY CO. Opposite N.P. Passenger Depot St. Cloud, Minn.	St. Cloud	1947	Bituminous low-volatile
Nebraska	DONOHO COAL CO. 917 South 39th St. Omaha 5, Nebr.	Omaha	1934	Semianthracite and petroleum coke
Ohio	ACKERMAN COAL CO. 1212 Elm St. Toledo, Ohio	Toledo	1940	Bituminous low-volatile
Do	AIR CITY FUEL CO. 1287 Air City Ave. Dayton 3, Ohio	Dayton	1945	Bituminous low-volatile
Do	BARTAK COAL & SUPPLY CO. 5381 Dunham Road Maple Heights, Ohio	Maple Heights (nr Cleveland)	1943	Bituminous low-volatile
Do	THE DENISON COAL & SUPPLY CO. 7008 Denison Ave. Cleveland 2, Ohio	Cleveland	1935	Bituminous low-volatile
Do	DIAMOND SUPPLY & COAL CO. 4120 East 104th St. Cleveland 5, Ohio	Cleveland	1934	Bituminous low-volatile
Do	THE ERIE COAL & COKE CO. 17230 Waterloo Road Cleveland, Ohio	Cleveland	1937	Bituminous low-volatile
Do	W. A. GOSLINE & CO. INC. 1202 Lagrange St. Toledo 2, Ohio	Toledo	1935	Bituminous low-volatile
Do	THE MOELDER COAL CO. Chickering Ave. & B.& O.R.R. Cincinnati 32, Ohio	Cincinnati	1938	Bituminous low-volatile
Do	MURRAY CITY COAL & ICE CO. 1334 Edgehill Road Columbus 8, Ohio	Columbus	1940	Bituminous low-volatile
Do	THE NICKEL PLATE COAL CO. INC. 1639 Wayside Road Cleveland 12, Ohio	Cleveland	1935	Bituminous high-volatile

DIRECTORY OF PACKAGED-FUEL OPERATIONS IN THE UNITED STATES WHICH REPORTED PRODUCTION IN 1949 -- Continued

State	Name and address of operator	Location of plant	Year plant put in operation	Raw fuel used, as reported by operator
CENTRAL STATES--Continued				
Ohio--Continued				
Do	PACIFIC COAL & SUPPLY INC. 6317 Kinsman Road Cleveland 4, Ohio	Cleveland	1936	Bituminous low-volatile
Do	PACKAGE COAL CO. 300 Mt. Vernon Ave. Columbus, Ohio	Columbus	1932	Bituminous low-volatile
Do	RALPH COAL CO. 873 Western Ave. Toledo, Ohio	Toledo	1940	Bituminous low-volatile
Do	REID COAL CO. 3448 E. 49th St. Cleveland 4, Ohio	Cleveland	1942	Bituminous low-volatile
Do	WHITEHOUSE COAL CO. 12400 Broadway Cleveland, Ohio	Cleveland	1936	Bituminous low-volatile
Wisconsin	THE CLEVELAND-CLIFFS IRON CO. 1460 Union Commerce Bldg. Cleveland 14, Ohio	Green Bay	1940	Bituminous low-volatile
Do	JOHNSON COAL CO. 1127 North Chatham St. Racine, Wis.	Racine	1937	Bituminous high-volatile
Do	FRANK KRIZ & CO. 648 23d St. Oshkosh, Wis.	Oshkosh	1937	Bituminous low-volatile and petroleum coke
Do	SAWYER FUEL & SUPPLY CO. Gordon Bent Bldg. 127 Main St. Green Bay, Wis.	Sawyer	1943	Bituminous low-volatile
Do	SHEBOYGAN COAL CO. 726 South 7th St. Sheboygan, Wis.	Sheboygan	1936	Bituminous low-volatile
Do	SUPERIOR PACKAGED FUEL CO. 1005 Winter St. Superior, Wis.	Superior	1938	Bituminous low-volatile
Do	VALLEY COAL COMPANY, INC. 234 West Johnson St. Fond du Lac, Wis.	Fond du Lac	1936	Bituminous low-volatile and petroleum coke

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1/ In addition to the plants listed herein, there were 8 other plants operating in 1949 (1 in Kentucky, 4 in Michigan, 1 in Missouri, and 2 in Ohio).

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE JUNE 6, 1950.

MINERAL MARKET REPORT
MMS NO. 1863

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DOMESTIC BALL CLAY SALES DECLINED IN 1949

Sales of ball clay in 1949, as reported by producers to the Bureau of Mines, United States Department of the Interior, were 17 percent lower than in 1948, but were slightly over the 5-year average of 1945-49.

For 7 years Tennessee has furnished the largest portion of the output; in 1949 Tennessee contributed 132,337 tons (53 percent of the total ball clay production); Kentucky was second, with 89,281 tons (36 percent), and the remainder came from Maryland, Mississippi, and New Jersey. Kentucky and Tennessee showed decreases of 14 and 24 percent, respectively, compared with 1948; increases were reported from Maryland and New Jersey.

Ball clays are used principally in the manufacture of whiteware; in this market sales decreased 17 percent, compared with 1948. On the other hand, the use of ball clay in high grade tile, architectural terra cotta, and enameling showed increases. Over 80 percent (200,142 tons) of the national output in 1949 was sold for use in pottery; 11 percent (27,349 tons) in high grade tile; 5 percent (11,603 tons) in refractories, and the remaining 4 percent in enamel, paper filler, and other uses.

The average value reported by producers to the Bureau of Mines rose from $11.18 in 1948 to $12.31 in 1949.

Ball clay sold by producers in the United States, 1947-49, by States

States	1947		1948		1949	
	Sh. tons	Value	Sh. tons	Value	Sh. tons	Value
Kentucky	99,951	$1,072,203	103,426	$1,155,530	89,281	$1,076,531
Maryland, Mississippi, and New Jersey	22,931	262,947	21,756	284,588	27,265	327,427
Tennessee............	146,168	1,588,610	173,797	1,902,529	132,337	1,660,481
Total	269,050	2,923,760	298,979	3,342,647	248,883	3,064,439

Prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary

JAMES BOYD, Director

May 26, 1950

MINERAL MARKET REPORT
M.M.S. NO. 1866

DIRECTORY OF BEEHIVE-COKE PLANTS IN THE UNITED STATES THAT PRODUCED COKE IN 1949

Operator	Address	Name and location of plant	Number and type of ovens	
			Machine drawn	Hand drawn
KENTUCKY		Pike County		
Hellier Coal & Coke Company	1003 Union National Bank Building, Youngstown, Ohio	Hellier	195	
PENNSYLVANIA		Beaver County		
Jones & Laughlin Steel Corporation	Third Avenue & Ross Street, Pittsburgh 30, Pennsylvania	Aliquippa	240	
		Fayette County		
Blaney & Strawn Coal & Coke Company	P. O. Box 716, Star Junction, Pennsylvania	Star Junction		66
Bortz Coal Company	Union Trust Building, Uniontown, Pennsylvania	Daugherty	70	
		Sapper		26
		Stambaugh	204	
Bridgeview Coal Company	97 East Main Street, Uniontown, Pennsylvania	Donald #2	240	
Eberly Coal & Coke Company	208 Union Trust Building, Uniontown, Pennsylvania	Oliver #2	315	80
Fayette Fuel Company	108 North Beeson Avenue, Uniontown, Pennsylvania	Leith	370	
H. C. Frick Coke Company	Frick Building, Pittsburgh 30, Pennsylvania	Collier	400	
		Continental #1	400	
		Crossland	120	
		Dearth	250	
		Kyle	247	
		Leisenring #1	296	
		Leisenring #2	497	
		Phillips	400	
		Shoaf #1	302	
Galiardi Coal & Coke Company	Second National Bank Building, Connellsville, Pennsylvania	Crawford #2		30
		York Run	303	92
Geneva Coke Company	Fayette Title & Trust Building, Uniontown, Pennsylvania	Geneva		198
Hillman Coal & Coke Company	1914 Grant Building, Pittsburgh 19, Pennsylvania	Alicia #1	400	
		Allison	395	
		Crystal	88	
		Griffin #2	193	
		Tower Hill	254	
J. G. Hoffstot	Farmers Bank Building, Pittsburgh 22, Pennsylvania	La Belle		19
Leckrone Coal & Coke Company	R. D. #1, Box 16, McClellandtown, Pennsylvania	Emery		32
		Puritan #1		81
Mount Braddock Coal & Coke Company	Mount Braddock, Pennsylvania	Mount Braddock	143	
Old Home Fuel Company	208 Union Trust Building, Uniontown, Pennsylvania	Old Home		35
Penn-Central Industries, Inc.	Oliver, Pennsylvania	Oliver #1	34	133
Pennsylvania Coal Company	Gray Law Building, Uniontown, Pennsylvania	Puritan #6 & 7	120	74
Pittsburgh Steel Company	1600 Grant Building, Pittsburgh 19, Pennsylvania	Thompson #2	320	
Republic Steel Corporation	Republic Building, Cleveland 1, Ohio	Brownsville	296	
		Donald #3	85	
		Duncan	80	
Richhill Coke Company	Fayette Title & Trust Building, Uniontown, Pennsylvania	Richhill		14
Weinman Coal Company	Mount Pleasant, Pennsylvania	Gilmore		80
Wynn Coal & Coke Company	Fairchance, Pennsylvania	Wynn	170	
Wynn Construction Company	Fairchance, Pennsylvania	Laughead	60	
		Greene County		
Hillman Coal & Coke Company	1914 Grant Building, Pittsburgh 19, Pennsylvania	Poland	102	

DIRECTORY OF BEEHIVE-COKE PLANTS IN THE UNITED STATES THAT PRODUCED COKE IN 1949 (Continued)

Operator	Address	Name and location of plant	Number and type of ovens	
			Machine drawn	Hand drawn
PENNSYLVANIA (Continued)		Indiana County		
Beatty Coal Company	Latrobe, Pennsylvania	Graceton a/		95
Rochester & Pittsburgh Coal Company	Indiana, Pennsylvania	Ernest	262	
		Westmoreland County		
Atlantic Crushed Coke Company	121 North Main Street, Greensburg, Pennsylvania	Atlantic #2 Salem		120 200
Bortz Coal Company	Union Trust Building, Uniontown, Pennsylvania	Central	98	6
George K. Brennen	Scottdale, Pennsylvania	Myers #3		38
Brinkerton Coke Company	Calumet, Pennsylvania	Brinkerton		18
Calumet Coal & Coke Company	Scottdale, Pennsylvania	Humphreys	180	
Carpentertown Coal & Coke Company	1100 Union Trust Building, Pittsburgh 19, Pennsylvania	Carpentertown Standard	310 244	
C. W. Dillon	Calumet, Pennsylvania	Calumet		160
Lloyd C. Hepler	Scottdale, Pennsylvania	Whyel		35
Jamison Coal & Coke Company	Greensburg, Pennsylvania	Jamison #2 b/	430	
King Brothers Coal & Coke Company	Scottdale, Pennsylvania	Marguerite	200	
King Coke Company	Scottdale, Pennsylvania	Arona		40
Samuel F. King Coke Company	Scottdale, Pennsylvania	Udell		33
Latrobe Coal & Coke Company	Latrobe, Pennsylvania	Peanut		50
Mammoth Coal & Coke Company	Mammoth, Pennsylvania	Mammoth #1	76	36
Stewart Coal & Coke Company	Greensburg, Pennsylvania	Beatty #2	175	
United Coke Company	United, Pennsylvania	United		41
Weinman Coal Company	Mount Pleasant, Pennsylvania	Star		16
UTAH		Carbon County		
Kaiser & Frazer Parts Corporation	Provo, Utah	Columbia	500	
Utah Fuel Company	715 Judge Building, Salt Lake City 12, Utah	Sunnyside		297
VIRGINIA		Wise County		
Christie Coal Company	Norton, Virginia	Esserville		72
Hawthorne Coal & Coke Company	Norton, Virginia	Hawthorne		50
Norton Coal Company	Norton, Virginia	Norton	92	
Stonega Coke & Coal Company	Big Stone Gap, Virginia	Stonega	116	250
Wise Coal & Coke Company	Dorchester, Virginia	Dorchester	170	
WEST VIRGINIA		Barbour County		
P. & I. Coal & Coke Company	Junior, West Virginia	Gage		60
		Fayette County		
Allied Chemical & Dye Corporation	40 Rector Street, New York 6, New York	Carbondale c/ Harewood c/	 83	102 83
Babcock Coal & Coke Company	906 Frick Building, Pittsburgh 30, Pennsylvania	Sewell		193
		Monongalia County		
Cornell Coke Company	Uniontown, Pennsylvania	Rock Forge		132
		Nicholas County		
Donegan Coal & Coke Company	70 Pine Street, New York 5, New York	Fenwick		50
		Preston County		
The Martreb Corporation	Kingwood, West Virginia	Bretz	85	
Preston County Coke Company	Cascade, West Virginia	Cascade	166	28

a/ Abandoned in June. b/ Abandoned in July. c/ Discontinued in May.

Prepared by Maxine M. Otero, J. A. DeCarlo, and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Fuels and Explosives Division.

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary** JAMES BOYD, **Director**

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

FOR IMMEDIATE RELEASE

NOV 1 1 1950

MINERAL MARKET REPORT
MMS NO. ~~1864~~ 1867

LEAD AND ZINC PIGMENTS AND ZINC SALTS IN 1949

The lead and zinc pigments industries were featured in 1949 by reduced shipments in all classes, according to the Bureau of Mines, United States Department of the Interior. Most of the drops were substantial. The declines in lead pigments ranged from 19 percent for red lead to 41 percent for white lead (dry), in zinc pigments from 27 percent for zinc oxide (lead-free) to 46 percent for the leaded variety, and were 20 and 7 percent, respectively, for zinc chloride and zinc sulfate.

There were diversified movements in the industries which are the chief consumers of pigments: Automobile production rose 17 percent to a new all-time peak; total value of construction put in place, both private and public exceeded $19 billion, topping the 1948 record by 3 percent; the value of sales of paints, varnish and lacquer materials fell about 9 percent; consumption of natural rubber 8 percent and of the synthetic type 6 percent; and production of synthetic rubber dropped 23 percent, indicating a more pronounced decline than consumption data in need for pigments. The relatively greater drop in shipments of pigments than in the level of activity in pigment-consuming industries, may be explained by a reduction in inventories of pigments at consumers' plants.

Prices of lead pigments were about 1/3 lower at the end than at the beginning of the year, reflecting a sharper drop in pig lead prices that accompanied the more abundant supplies in 1949 of this raw material. On the other hand, prices of zinc pigments, a large percentage of which is made directly from ores, on an average dropped little more than 20 percent, whereas the price of slab zinc fell 44 percent from the beginning to the end of the year. Lead pigment prices were at all-time peaks in 1948.

Shipments and production.--Shipments of white lead (dry) dropped 41 percent, and of the "in oil" variety 40 percent, both grades were the smallest by far since considerably before the beginning of the present century; total white lead shipments amounted to only 27 percent of the annual average for 1935-39. Production of dry white lead was 15,609 tons and of white lead in oil 11,187 tons. Litharge shipments declined 22 percent in 1949 and were the smallest since 1943. Production amounted to 123,157 tons. Red lead decreased 19 percent, the smallest decline of the pigments covered by this report, and was the smallest since 1933. Production was 26,362 tons.

Prepared by Helena M. Meyer and Alethea W. Mitchell, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Lead and zinc pigments and zinc salts shipped by domestic manufacturers in the United States, 1948-49

	1948			1949		
	Short tons	Value		Short tons	Value	
		Total	Per ton		Total	Per ton
Basic lead sulfate or sublimed lead:						
White	(1)	(1)	(1)	(1)	(1)	(1)
Blue	(1)	(1)	(1)	(1)	(1)	(1)
Red lead	30,787	$12,190,258	$396	24,866	$8,276,801	$333
Litharge	154,775	59,952,202	387	121,052	39,262,768	324
White lead:						
Dry	26,551	9,643,402	363	15,719	5,520,250	351
In oil 2/	19,519	9,129,237	468	11,636	5,504,207	473
Zinc oxide	150,958	32,862,368	218	110,132	25,299,970	230
Leaded zinc oxide	67,441	16,548,636	245	36,722	8,874,695	242
Lithopone	140,033	16,135,976	115	78,335	8,977,178	115
Zinc chloride, 50° Baume	68,701	4,717,963	69	55,208	3,857,386	70
Zinc sulfate	21,513	2,443,869	114	20,065	2,365,120	118

1/ Bureau of Mines not at liberty to publish.

2/ Weight of white lead only but value of paste.

Shipments of zinc sulfate by uses, 1948-49, in short tons

Industry	1948		1949	
	Gross weight	Dry basis	Gross weight	Dry basis
Rayon	9,900	7,333	10,591	7,957
Agriculture	5,210	4,248	4,429	3,595
Chemicals	1,734	1,193	1,197	851
Flotation reagent	1,632	1,366	921	757
Paints and varnish processing	121	104	663	585
Glue	561	462	453	370
Electrogalvanizing	319	205	217	154
Textile dyeing and printing	102	66	30	21
Other	1,934	1,191	1,564	979
	21,513	16,168	20,065	15,269

Shipments of lead and zinc pigments, by uses, 1948-49

	1948 Short tons	1949 Short tons
White lead (dry and in oil)		
Paints	40,892	17,350
Ceramics	1,369	894
Other	3,809	9,111
	46,070	27,355
Red lead		
Storage batteries	14,854	12,163
Paints	10,863	9,634
Ceramics	1,275	603
Other	3,795	2,466
	30,787	24,866
Litharge		
Storage batteries	2/100,645	2/77,163
Ceramics	19,979	13,299
Chrome pigments	7,455	8,557
Oil refining	7,248	5,720
Insecticides	6,033	5,353
Varnish	4,424	4,286
Rubber	2,835	1,398
Floor coverings	152	62
Other	6,004	5,214
	154,775	121,052
Basic lead sulfate		
Paints	(5)	(5)
Rubber		
Storage batteries		
Other		

	1948 Short tons	1949 Short tons
Lithopone		
Paint, varnish and lacquers	1/104,441	1/56,146
Floor coverings and textiles	20,859	12,982
Rubber	4,192	3,245
Other	10,541	5,962
	140,033	78,335
Zinc oxide		
Rubber	82,895	58,496
Paints	26,779	26,205
Ceramics	12,327	6,982
Coated fabrics and textiles	3/9,474	4/5,200
Floor coverings	4,938	2,665
Other	14,545	10,584
	150,958	110,132
Leaded zinc oxide		
Paints	64,912	35,938
Rubber	218	124
Other	2,311	660
	67,441	36,722

1/ Includes a quantity, not separable, used for printing ink.
2/ In addition 69,000 tons of black or gray oxide in 1948 and 55,000 tons in 1949 were produced by makers of storage batteries in their own plants.
3/ Of which 8,209 tons were for rayon.
4/ Of which 4,470 tons were for rayon.
5/ Bureau of Mines not at liberty to publish.

Lead-free zinc oxide shipments dropped 27 percent and were the lowest since 1942 when the output was adversely affected by stringent supplies of zinc metal and scrap. Production (109,126 tons in 1949) was curtailed by the labor strike beginning September 26 and lasting beyond the end of the year at the Palmerton, Pa., plant of the New Jersey Zinc Co. This closure also reduced outputs of the leaded grades and of lithopone. Shipments of leaded zinc oxide fell 46 percent in 1949 and were the lowest since 1935, whereas those of lithopone decreased 40 percent and were the smallest since 1921. Production of leaded zinc oxide was 37,046 tons and of lithopone was 72,233 tons.

Zinc chloride and zinc sulfate shipments dropped 20 and 7 percent, respectively, in 1949. Those for zinc chloride were the smallest since 1943 and of zinc sulfate since 1944. Zinc sulfate shipments in terms of 100 percent $ZnSO_4$, were 15,269 tons. Zinc chloride output was 55,197 tons and zinc sulfate, 20,952 tons.

Prices.—There were substantial drops in average prices for lead pigments in 1949 from the all-time peaks established in 1948. Zinc-pigments price quotations followed the same pattern. In most instances lead-pigment prices were at their lowest levels in June, had substantial recovery in the next several months and returned to or close to mid-year low points in December. Zinc-pigment prices reached their lowest points a little later and after recoveries similar to those for lead pigments resumed downtrends but ended the year only a little above the year's lowest levels.

Beginning and ending prices of representative pigments were as follows:

	Cents per pound	
	Beginning	End
White lead, basic carbonate, bags, less carlots, shipping point, freight allowed	23 1/10	15 3/4
Red lead, 95% Pb_3O_4 or less, barrels, less carlots, 5 tons, shipping point, freight allowed	25 1/4	15 3/4
Litharge, commercial, powdered, barrels, less carlots, 5 tons, shipping point, freight allowed	24 1/4	14 3/4
Zinc oxide, American process, commercial, lead-free, bags, less carlots, works	13 3/4	11 1/4
Zinc oxide, leaded, bags, less carlots, works, 5%	13 3/4	11 1/4
35%	15 3/8	12 - 12 1/4
50%	16 1/8	12 3/8 - 12 3/4
Lithopone, ordinary, bags, less carlots, shipping point	6 5/8 - 6 3/4	6 1/2 - 6 5/8

Foreign trade.--Imports of lead and zinc pigments are insignificant in relation to domestic shipments of the various items. Litharge was the chief lead pigment entry in 1948 but dropped below basic carbonate white lead in 1949. Altogether only a few hundred tons of pigments were involved in the latter year. In 1949 239 tons of zinc oxide were imported, compared with 27 tons in 1948 and 12 tons of lithopone compared with none. Receipts of the zinc compound, zinc sulfate, were 120 tons in 1949 compared with 180 tons in 1948.

Lead pigments imported for consumption in the United States in 1948-49, in short tons

	1948	1949
Basic carbonate white lead------------------	203	161
Red lead------------------------------------	247	23
Litharge------------------------------------	1,064	96
Suboxide of lead----------------------------	34	23

Exports of all of the lead pigments gained in 1949; those of litharge being more than double those for the previous year.

Lead pigments exported in 1948-49, in short tons

	1948	1949
White lead----------------------------	663	699
Red lead------------------------------	953	1,042
Litharge------------------------------	644	1,357

Exports of lithopone and zinc oxide are usually the chief items in foreign trade in lead and zinc pigments. Those of lithopone in 1949 were 31 percent less than the relatively high rate for 1948, whereas zinc oxide exports were 42 percent lower than in 1948 and only about one-fourth of the 1947 tonnage.

Zinc pigments exported in 1948-49, in short tons

	1948	1949
Zinc oxide----------------------------	8,642	5,040
Lithopone-----------------------------	21,015	14,460

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN Secretary JAMES BOYD Director

FOR RELEASE JUNE 8, 1950.

MINERAL MARKET REPORT
MMS NO. 1868

KAOLIN OR CHINA CLAY IN 1949

Domestic output of kaolin or china clay declined in 1949 to 1,418,316 tons - 10 percent below the 1948 record of 1,568,848 tons, according to reports of producers to the Bureau of Mines, United States Department of the Interior.

Mine shipments were reported in 10 States, but most of the tonnage came from Georgia and South Carolina. Georgia contributed 71 percent of the total; South Carolina ranked second with 19 percent; Pennsylvania, third; and the remainder came from Alabama, California, Florida, Illinois, North Carolina, Utah, and Virginia.

The chief uses of kaolin in 1949 were in the manufacture of paper (762,255 tons); rubber (197,341 tons); refractories (120,816 tons); and pottery (122,328 tons). The remainder found its market in a variety of uses, including cement, high-grade tile, fertilizers, chemicals, paint filler or extender, calcimine, and linoleum.

Kaolin consumption decreased 17 percent in whiteware manufacture as compared with 1948; 27 percent in high-grade tile; 17 percent in refractories; and 13 percent in paper. Increases were reported in rubber, glass refractories, foundries, plaster, and unspecified uses.

The average sales value of kaolin was $13.40 compared with $12.59 in 1948. Imports of kaolin decreased from 99,930 tons in 1948 to 77,226 tons in 1949.

Kaolin sold or used by producers in the United States, 1948-49, by States

State	1948		1949	
	Short tons	Value	Short tons	Value
Alabama, Florida, and North Carolina..........	64,614	$1,106,387	52,703	$942,042
California...............	25,562	352,538	18,847	402,745
Georgia..................	1,135,440	14,642,698	1,003,391	13,806,336
Pennsylvania.............	50,021	190,998	52,478	201,576
South Carolina...........	283,485	3,347,078	274,458	3,488,054
Other States 1/..........	9,726	117,039	16,439	171,739
Total..........	1,568,848	19,756,738	1,418,316	19,012,492

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1/ Illinois, Utah, and Virginia.

This report prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

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MINERAL MARKET REPORTS
MMS NO. 1869

TITANIUM IN 1949

The year 1949, like 1948, was characterized by widespread interest and research in connection with the production of titanium metal and alloys, according to the Bureau of Mines, United States Department of the Interior. The unprecedented amount of money and effort being expended by Government and industry in experimental work are largely responsible for the many predictions that titanium will expand to large-scale use much more rapidly than its predecessor metals. More than one authority predicted during the year that titanium and titanium alloys would become primary structural materials within 10 years. The problem of producing metal at a price sufficiently low to attract production and consumption in large quantities remains to be solved. In 1949 titanium metal was produced commercially for the second successive year and on an increasing scale. One pilot plant operated continuously at approximately 100 pounds a day throughout the year and a second pilot plant of somewhat larger capacity went into production near the close of the year. Other pilot plants were under construction at the year-end and the Bureau of Mines continued metal production at Boulder City, Nev., throughout the year.

The titanium industry, in addition to the enthusiasm and energy expended in connection with the metal, was featured by new maximum production and shipments of ilmenite for the third successive year, by new peak imports, and by unprecedented output and shipments of rutile. However, 1949, marked a break in the establishment of new high ilmenite consumption records following 6 consecutive tops. Rising inventories of crude materials also occurred.

Production and shipments of ilmenite were 5 and 2 percent, respectively, greater than in 1948, following 14 percent gains for both in that year. Imports were 34 percent higher than in 1948 and 8 percent above the earlier peak in 1947. Domestic shipments and imports together were 40 percent above consumption resulting in a 33-percent rise in industry stocks. Inventories at the end of 1949 were equivalent to 1.4 years' needs at the 1949 rate of use.

Production and shipments of rutile were 62 and 7 percent larger than in 1948 and thus established new peaks. Some of the material covered, however, was not consumed for customary rutile purposes (see consumption table). Imports of rutile were little more than one-third of the reduced quantity entered in 1948. Supplies from domestic and foreign sources were more than adequate for the increased requirements in 1949 and inventories rose 18 percent. Stocks at the year-end would fill United States' needs at the 1949 rate of consumption for 11 months.

Progress toward bringing into production an ilmenite property that will rank with the world's largest producers, and may exceed all others, was reported in

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Prepared by Helena M. Meyer, under the supervision of Robert H. Ridgway, Acting Chief, Light Metals Branch, Minerals Division.

1949. This is the property of the Quebec Iron and Titanium Corp. (owned by the Kennecott Copper Corp. and the New Jersey Zinc Co.) in the Allard Lake area of Quebec, Canada.

Production and shipments. - The property of E. I. du Pont de Nemours & Co. at Starke, Florida began to produce ilmenite and a mixed product containing altered ilmenite, leucoxene, and rutile, in March 1949. Production of ilmenite and rutile came again from the Rutile Mining Co. of Florida near Jacksonville and from the property of the Florida Ore Processing Co. near Melbourne.

The Tahawus property of the National Lead Co., Essex County, New York, produced slightly more ilmenite in 1949 than the previous peak in 1948, and continued to be the leading producer in the world. In North Carolina, the Yadkin Mica & Ilmenite Co., subsidiary of the Glidden Co. produced 31,364 tons of ilmenite, or more than ever before, at Finley, Caldwell County.

Ilmenite and rutile were produced again in 1949 near Roseland, Nelson County, Virginia, by the American Rutile Corp., subsidiary of the Metal & Thermit Corp. This property was closed in July because of the exhaustion of commercial reserves. The Calco Chemical Division of American Cyanamid Co. continued to produce ilmenite at Piney River, also in Nelson County.

Production and shipments of ilmenite in the United States, 1945-49

Year	Production (Short tons)	Shipments		
		Gross weight (Short tons)	TiO_2 content (Short tons)	Value
1945...............	308,516	308,518	141,852	$7,359,170
1946...............	282,447	282,708	130,624	4,878,917
1947...............	336,533	336,061	157,328	5,029,490
1948...............	383,745	381,508	177,447	5,793,973
1949...............	402,334	389,234	186,535	6,212,348

Production and shipments of rutile in the United States, 1945-49

Year	Production (Short tons)	Shipments		
		Gross weight (Short tons)	TiO_2 content (Short tons)	Value
1945...............	7,179	6,837	6,414	$869,920
1946...............	7,453	7,514	7,046	996,989
1947...............	8,562	5,157	4,813	533,548
1948...............	7,380	9,907	9,226	647,334
1949...............	1/11,988	1/10,559	1/9,414	489,798

1/ Includes a mixed product containing altered ilmenite, leucoxene, and rutile.

Consumption. - Data on consumption, by uses, are contained in the following table. Titanium pigments, which take 99 percent of the ilmenite consumed in the United States, declined 6 percent in output and 9 percent in shipments in 1949. The drop in general industrial activity in mid-year adversely affected use of titanium pigments, but this class of pigments fared much better than other white pigments, namely white lead (dry and in oil), zinc oxide (lead-free and leaded), and lithopone, shipments of which declined 41, 33, and 44 percent, respectively, in 1949 as compared with 1948.

Consumption of ilmenite and rutile in the United States, 1945-47 (total) and 1948-49, by products, in short tons

Product	Ilmenite		Rutile	
	Gross weight	Estimated TiO_2 content	Gross weight	Estimated TiO_2 content
1945	381,178	187,580	9,791	9,144
1946	404,283	202,663	7,134	6,670
1947	479,524	250,859	7,692	7,083
1948:				
Pigments (manufactured titanium dioxide)1/	558,448	297,728	(2)	(2)
Welding-rod coatings 1/	145	72	7,885	7,289
Alloys and carbide	6,377	2,591	952	889
Ceramics	—	—	175	166
Miscellaneous	30	17	3/1,218	3/1,144
Total	565,000	300,408	4/10,230	4/9,488
1949:				
Pigments (manufactured titanium dioxide)1/	505,432	265,854	(2)	(2)
Welding-rod coatings 1/	165	85	6,399	5,904
Alloys and carbide	4,969	2,037	660	619
Ceramics	—	—	143	136
Miscellaneous	42	24	5/4,686	5/4,204
Total	510,608	268,000	5/11,888	5/10,863

1/ "Pigments" include all manufactured titanium dioxide, consumption of which in welding-rod coatings was 1,338 tons in 1948, and 1,082 tons in 1949.
2/ Bureau of Mines not at liberty to publish; figures included in "Miscellaneous."
3/ Revised figures. Includes rutile used to make pigments.
4/ Revised figures.
5/ Includes a mixed product containing altered ilmenite, leucoxene, and rutile, used to make pigments and metal.

Stocks. - Details covering stocks of ilmenite and rutile in the United States are covered by the following table.

Industry stocks of titanium concentrates in the United States at end of year, 1948-49, in short tons

Stocks	1948				1949			
	Ilmenite		Rutile		Ilmenite		Rutile	
	Gross weight	Estimated TiO_2 content	Gross weight	Estimated TiO_2 content	Gross weight	Estimated TiO_2 content	Gross weight	Estimated TiO_2 content
Mine...........	3,983	1,800	1,500	1,399	16,933	7,569	2,952	2,750
Distributors 1/	4,499	1,809	4,218	3,986	2,478	1,026	4,329	4,090
Consumers......	522,077	250,559	3,493	3,255	683,635	332,156	3,586	3,148
Total........	530,559	254,168	9,211	8,640	703,046	340,751	10,867	9,988

1/ Includes ilmenite and rutile content of mixed zirconium-titanium concentrates.

Prices. - Quotations for both ilmenite and rutile trended downward in 1949, a reflection of the ample supply of these concentrates in that year. The average quotation per gross ton for ilmenite containing 56-59 percent TiO_2, f.o.b. Atlantic seaboard, dropped from a range of \$18-\$20, according to grade and impurities, at the beginning of the year to \$14-\$16 in the first half of November, and continued at this level beyond the year-end. Quotations were nominal throughout the year. Nominal quotations for rutile, guaranteed minimum 94-percent concentrate, after continuing at 8-10 cents a pound for a number of years, fell to 6-8 cents in December 1948 and further to 4-5 cents by the end of 1949.

Imports. - Ilmenite imports established a new peak in 1949. India, as usual, led other sources by a substantial margin. Rutile entries, on the other hand, were little more than one-third as large as the reduced quantity in 1948.

Titanium concentrates1/ imported for consumption in the United States, 1945-49, by countries, in short tons

[From records of the U. S. Department of Commerce]

Country of origin	1945	1946	1947	1948	1949
ILMENITE					
Australia2/	1,753	—	3/1,659	(4)	—
Brazil	10,508	2	1	8,708	—
British Malaya	—	—	—	3,335	—
Canada	6,987	1,250	7,122	4,519	540
Ceylon	—	—	—	—	2
Egypt	—	—	—	—	721
India	179,693	218,623	262,503	184,309	289,739
Norway	9,895	21,077	30,026	41,248	33,155
Total as reported	208,836	240,952	301,311	242,119	324,157
Australia: In "zirconium ore"2/	5/1,236	1,388	—	—	—
Grand total	210,072	242,340	301,311	242,119	324,157
Value of "As reported"	$1,217,339	$1,440,112	$1,791,020	$1,758,848	$2,479,071
RUTILE					
Australia2/	3,070	4,377	7,460	8,771	3,085
Brazil	234	31	—	—	—
Cameroun (French)6/	—	—	3	—	—
India	—	—	113	—	—
Norway	—	—	—	(4)	—
Total as reported	3,304	4,408	7,576	8,771	3,085
Australia: In "zirconium ore"2/	7,298	1,456	—	—	—
In "ilmenite"	—	—	3/5,061	—	—
Grand total	10,602	5,864	12,637	8,771	3,085
Value of "As reported"	$98,170	$213,795	$468,810	$588,713	$179,746

1/ Classified as "ore" by the U. S. Department of Commerce.

2/ Most of the imports of titanium from Australia in 1945-47 were in mixed zircon-rutile-ilmenite concentrates. Totals of mixed concentrates are derived by addition of the U. S. Department of Commerce figures for imports of ilmenite, rutile, and "zirconium ore" from Australia. These totals are apportioned by the Bureau of Mines (on the basis of surveys of importers) into the three component minerals. The excess quantities of ilmenite and rutile over the quantities reported by the U. S. Department of Commerce in those specific categories are entered as "In 'zirconium ore.'"

3/ Most of the ilmenite, rutile, and zircon from Australia in 1947 was imported in the form of zircon-rutile or zircon-rutile-ilmenite mixed concentrates. These concentrates (including separated concentrates of a single mineral) totaled 36,074 short tons, of which 1,659 were ilmenite, 12,521 rutile, and 21,894 zircon. For statistical convenience, it can be assumed that 5,061 tons of the material reported by the Department of Commerce as ilmenite was actually rutile; the value of this 5,061 tons of rutile, however, is inseparable from the ilmenite as reported.

4/ Less than 1 ton.

5/ Includes 309 tons not recovered from mixed concentrates.

6/ Includes quantities reported by the U. S. Department of Commerce as originating in French Equatorial Africa, from which no rutile production has been recorded.

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MINERAL MARKET REPORT
M.M.S. NO. 1870

TIN RECOVERED BY DETINNING PLANTS IN 1949.

Secondary tin recovered by detinning plants, as metal and in chemical compounds was virtually unchanged in 1949, according to the Bureau of Mines, United States Department of the Interior. The total tin recovered was 3,798 short tons in 1949, and 3,794 in 1948. Tin-plate clippings and old cans were the source of 3,654 tons in 1949, of which 3,195 was reclaimed as metal in the form of pigs, and 459 tons in the form of tin compounds. During 1948 the usage of such material provided 3,667 tons, comprising 3,284 tons of metal and 383 tons in compounds. The treatment of other tin-bearing materials accounts for the remaining production of 144 tons in 1949, and 127 in 1948.

The industry reported treating 387,468 long tons of tin-plate clippings in 1949. This was the largest of record, and exceeded the previous peak reached in 1948 by nearly 3 percent. The earlier peak year of 1941 was exceeded by 14 percent. The average cost of such clippings delivered at plants decreased from $37.48 a long ton in 1948 to $25.21 in 1949, responding to a proportional reduction in the price of No. 1 heavy-melting steel scrap. Old cans processed increased 2 percent to only 15,382 long tons in 1949, compared with 15,079 tons in 1948, and with the record use of 175,870 tons in 1943. Tin recovered from tin-plate clippings in 1949 was 3,543 tons, slightly less than 1948; while that from old cans, 111 tons (mostly in the form of pig tin) increased 5 percent.

The average quantity of tin recovered per long ton of tin-plate scrap treated was 18.29 pounds in 1949, against 18.91 pounds in 1948. Before the introduction of electrolytic tin plate, and war-time restrictions on the weight of tin on the hot-dipped product recoveries averaged around 37 pounds per ton of material detinned. Lower recoveries per unit for the most part reflect the treatment of a larger proportion of electrolytic tin plate carrying a much thinner coating of tin than the heavier coated hot-dipped product. The use of electrolytic tin plate has been expanding in the manufacture of cans (both general line, and packers' or sanitary) and closures. The average quantity of tin recovered per long ton of old tin-coated containers used increased to 14.43 pounds in 1949, compared with 14.10 pounds in 1948, but was considerably below the 22.58 pounds recorded for 1943.

Imports of tin-plate scrap were 41,028 long tons in 1949 against 41,084 in 1948 (detinned, this material would provide the equivalent of about 400 tons of tin). No exports of tin-plate scrap were recorded for 1948 and 1949.

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Prepared by Samuel A. Gustavson and John B. Umhau, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Secondary tin recovered at detinning plants in the United States, 1948 & 1949.

		1948	1949
Scrap treated:			
Clean tin plate	long tons	376,620	387,468
Old tin-coated containers	long tons	15,079	15,382
		391,699	402,850
Tin recovered from new tin-plate clippings	short tons	3,561	3,543
Tin recovered from old tin coated containers	short tons	106	111
		3,667	3,654
Tin recovered as metal	short tons	1/ 3,284	1/ 3,195
Tin recovered in compounds	short tons	383	459
		2/ 3,667	2/ 3,654
Weight of tin compounds produced	short tons	735	932
Average quantity of tin recovered per long ton of clean tin-plate scrap used	pounds	18.91	18.29
Average quantity of tin recovered per long ton of old tin-coated containers used	pounds	14.10	14.43

1/ Includes a small tonnage of pig tin of less than standard purity and, consequently, subject to further refining or alloying.

2/ Recovery from tin-plate clippings and old containers only. In addition, detinners recovered 144 tons of tin as metal and in compounds from tin-base scrap and residues in 1949, and 127 tons from these sources in 1948.

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OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

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FOR RELEASE JUNE 16, 1950

MINERAL MARKET REPORT
MMS NO. 1871.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN IDAHO, 1949 - FINAL ANNUAL FIGURES

Gold was the only major nonferrous metal that increased in Idaho's metal output in 1949, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. Lead, zinc, and silver - the principal metals mined in Idaho - each declined as well as copper. The gold output increased from 58,454 fine ounces in 1948 to 77,829 in 1949, a 33-percent gain; but the silver output declined from 11,448,875 fine ounces to 10,049,257, a 12-percent loss; copper from 3,248,000 pounds to 2,876,000, an 11-percent loss; lead from 177,088,000 pounds to 158,598,000, a 10-percent loss; and zinc from 172,534,000 pounds to 153,110,000, an 11-percent loss. The lead output again exceeded the zinc output, but only by 4 percent. The total value of the five metals dropped from $67,758,290 in 1948 to $56,429,796 in 1949, a 17-percent loss. Of the total value in 1949, lead contributed 44 percent, zinc 34, silver 16, gold 5, and copper 1 percent. In 1949 the State remained the largest producer of silver and zinc in the United States and the second largest producer of lead (exceeded only by Missouri).

Despite a sufficient supply of mine labor, Idaho's mining industry suffered a serious setback in 1949, owing to a strike from August 20 to November 14 at the Bunker Hill lead smelter at Bradley, which caused most of the large producing zinc-lead-silver and silver-lead mines in the Coeur d8Alene region to cease operations. This strike, coupled with declines in the prices of lead and zinc principally during the second quarter of the year, resulted in substantial decreases in the production of silver, copper, lead, and zinc in 1949 compared with 1948. However, gold production rose as a result of the Bradley Mining Co. treating an ore of higher gold content from its Yellow Pine mine at Stibnite. About 69 percent of the State gold production in 1949 came from the Yellow Pine mine in Valley County; the remainder came largely from dredging operations in the Elk City, Boise Basin, and Yankee Fork districts, and from lode mines in the Middle Boise (Atlanta) and Warm Springs (Ketchum) districts and the Coeur d'Alene region. The output of gold from lode mines was 62,751 ounces in 1949 compared with 37,678 ounces in 1948, and that from placers 15,078 ounces compared with 20,776 ounces.

The value of the metal production herein reported has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); and zinc, $0.124 per pound ($0.133).

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Of the 3,057,075 tons of ore produced in 1949 in Idaho, 3,011,615 tons (98.5 percent) were treated at mills, and the remainder, 45,460 tons (1.5 percent), was shipped crude to smelters. Most of the ore (63 percent) produced in 1949 was zinc-lead ore, which came principally from the Coeur d'Alene region; 20 percent was gold ore, which came largely from a mine in the Yellow Pine district in Valley County; and the remainder was mostly lead ore and silver ore, which came principally from the Coeur d'Alene region.

Mine production of gold, silver, copper, lead, and zinc in Idaho in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January..........	2,337	840,600	100	8,165	7,455
February.........	2,632	937,300	110	7,040	6,285
March............	3,934	1,047,200	145	8,470	7,430
April............	5,312	1,120,600	150	8,115	7,245
May..............	7,160	1,237,000	185	8,030	7,110
June.............	8,452	991,000	140	7,455	7,200
July.............	8,542	886,000	130	6,640	6,495
August...........	7,230	995,500	135	6,915	6,535
September........	8,987	321,000	60	3,305	4,315
October..........	8,687	194,500	40	2,775	3,745
November.........	7,622	484,053	81	5,029	5,863
December.........	6,934	994,504	162	7,360	6,877
Total: 1949...	77,829	10,049,257	1,438	79,299	76,555
1948...	58,454	11,448,875	1,624	88,544	86,267

Mine production of gold, silver, copper, lead, and zinc in Idaho, 1948-49, in terms of recovered metals

Metals	1948		1949	
	Quantity	Value	Quantity	Value
Gold, fine ounces....	58,454	$2,045,890	77,829	$2,724,015
Silver, fine ounces..	11,448,875	10,361,810	10,049,257	9,095,085
Copper, pounds.......	3,248,000	704,816	2,876,000	566,572
Lead, pounds.........	177,088,000	31,698,752	158,598,000	25,058,484
Zinc, pounds.........	172,534,000	22,947,022	153,110,000	18,985,640
Total value.......	....	67,758,290	....	56,429,796

Ore sold or treated in Idaho in 1949, with content in terms of recovered metals

Source	Mines producing	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore..................	33	624,083	57,281	108,613	229	4,050	130
Dry and siliceous gold-silver ore...........	4	79	54	1,468	212	1,037	....
Dry and siliceous silver ore...........	21	175,225	320	4,250,576	1,150,956	4,844,976	351,710
	58	799,387	57,655	4,360,657	1,151,397	4,850,063	351,840
Copper ore...........	7	384	10	554	82,510	....	....
Lead ore.............	62	287,664	772	1,475,017	289,911	23,865,407	2,336,052
Lead-copper ore.......	3	33	2	2,702	2,518	9,713	....
Zinc ore.............	4	1/ 49,401	16	14,950	9,480	1,182,480	7,490,088
Zinc-lead ore.........	59	1,920,206	4,296	4,190,996	1,340,184	128,690,337	142,932,020
Total lode mines...	2/171	1/3,057,075	62,751	10,044,876	2,876,000	158,598,000	153,110,000
Total placers.........	82	....	15,078	4,381	....	....	....
Total: 1949.......	253	1/3,057,075	77,829	10,049,257	2,876,000	158,598,000	153,110,000
1948.......	273	3/3,981,846	58,454	11,448,875	3,248,000	177,088,000	172,534,000

1/ Includes 22,389 tons of old lead-smelter slag.
2/ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.
3/ Includes 48,131 tons of old lead-smelter slag.

In 1949, the Coeur d'Alene region, Shoshone County, produced 91 percent of the State silver output, 81 percent of the copper, 93 percent of the lead, and 97 percent of the zinc. Although the State lead output exceeded the zinc output in 1949, this was not true in the Coeur d'Alene region where the zinc output exceeded the lead output by 435,200 pounds (less than one-half percent). Twenty-nine mills, with an aggregate capacity of 12,700 tons of ore a day, operated in the region in 1949. The following table gives the mine production of gold, silver, copper, lead, and zinc in the Coeur d'Alene region, Shoshone County, in 1948 and 1949, and total 1884-1949, in terms of recovered metals.

Mine production of gold, silver, copper, lead, and zinc in the Coeur d'Alene region, Shoshone County, 1948-49, and total 1884-1949, in terms of recovered metals

Year	Mines producing		Ore	Gold (lode and placer)	Silver (lode and placer)	Copper	Lead	Zinc	Total value
	Lode	Placer							
			Short tons	Fine ounces	Fine ounces	Pounds	Pounds	Pounds	
1948...........	65	7	3,165,780	3,362	10,598,338	2,775,000	165,174,000	167,601,000	$62,168,955
1949...........	61	1	2,282,614	2,438	9,146,146	2,341,000	148,304,000	148,739,200	50,599,924
Total, 1884-1949	...	...	(1)	401,674	461,266,814	2/ 69,235	2/5,761,866	2/1,434,288	1,285,021,193

1/ Figures not available. 2/ Short tons.

Other important producing districts were the Warm Springs in Blaine County with a production of 2,187 ounces of gold, 468,302 ounces of silver, 310,000 pounds of copper, 4,677,100 pounds of lead, and 3,270,800 pounds of zinc; the Yellow Pine in Valley County with a production of 53,576 ounces of gold, 92,439 ounces of silver and some antimony; and the Bayhorse in Custer County with a production of 46 ounces of gold, 87,130 ounces of silver, 16,800 pounds of copper, 2,146,600 pounds of lead, and 359,000 pounds of zinc.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

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OSCAR L. CHAPMAN, Secretary
JAMES A. KRUG, Director

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

FOR RELEASE JUNE 16, 1950

MINERAL MARKET REPORTS
MMS NO. 1872.

METAL MINING IN MONTANA, 1949 - FINAL ANNUAL FIGURES

Outputs of all five major nonferrous metals in Montana declined in 1949, compared with 1948 - gold 28 percent, silver 9, copper 3, lead 2, and zinc 8, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. Ore production was 14 percent less than in 1948. As a result of reductions in base-metal prices, as well as in outputs of all five metals, the value of each metal was considerably less than in 1948 - gold 28 percent less, silver 9, copper 12, lead and zinc about 14 each. This resulted in an over-all drop of 13 percent in total value - from $56,422,609 in 1948 to $49,003,447 in 1949. Of the total value in 1949, copper contributed 46 percent, zinc 27, lead and silver 12 each, and gold 4.

Active lode mines in the State increased from 250 in 1948 to 281 in 1949; active placer mines increased from 34 in 1948 to 48 in 1949, although the output of placer gold decreased 41 percent from that in 1948. Falling base-metal prices during the spring and summer resulted in marked curtailment at some properties and in closing at others. Evident during the year was a shift of operators from small properties producing base-metal ores to those producing gold and silver ores, as base-metal mining became less profitable. Copper ore mined in the State in 1949 declined 19 percent, zinc-lead, zinc, and lead ores 7, and gold and silver ores 22. Of the 2,595,934 tons of ore treated during the year (3,020,307 in 1948), 47 percent was copper ore (50 percent in 1948), 46 percent was zinc-lead, zinc, and lead ores (43 percent in 1948), and 7 percent was gold and silver ores (7 percent in 1948).

The value of the metal production herein reported has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); zinc, $0.124 per pound ($0.133).

Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Montana, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Pounds	Value
1945..........	44,597	$1,560,895	5,942,070	$4,225,472	177,012,000	$23,896,620
1946..........	70,507	2,467,745	3,273,140	2,644,697	116,962,000	18,947,844
1947..........	90,124	3,154,340	6,326,190	5,725,202	115,800,000	24,318,000
1948..........	73,091	2,558,185	6,930,716	6,272,648	116,504,000	25,281,368
1949..........	52,724	1,845,340	6,327,025	5,726,277	113,222,000	22,304,734

Year	Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	
1945................	19,998,000	$1,719,828	34,806,000	$4,002,690	$35,405,505
1946................	16,560,000	1,805,040	33,540,000	4,091,880	29,957,206
1947................	32,216,000	4,639,104	91,358,000	11,054,318	48,890,964
1948................	36,822,000	6,591,138	118,190,000	15,719,270	56,422,609
1949................	35,992,000	5,686,736	108,390,000	13,440,360	49,003,447

Mine production of gold, silver, copper, lead, and zinc in Montana in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January...........	3,315	606,695	4,600	1,665	5,710
February..........	3,380	568,345	5,495	1,741	5,520
March.............	4,445	646,135	5,750	1,905	6,195
April.............	4,615	620,075	5,210	1,545	5,255
May...............	5,055	659,495	5,175	1,530	5,725
June..............	4,525	453,785	4,230	1,460	4,245
July..............	4,680	419,455	3,960	1,310	3,660
August............	4,270	469,815	4,035	1,390	3,725
September.........	4,110	361,090	3,790	1,135	2,685
October...........	4,145	424,680	4,335	1,355	3,175
November..........	4,344	490,020	4,761	1,305	3,710
December..........	5,840	607,435	5,270	1,655	4,590
Total: 1949....	52,724	6,327,025	56,611	17,996	54,195
1948....	73,091	6,930,716	58,252	18,411	59,095

Ore sold or treated in Montana in 1949, with content in terms of recovered metals

Source	Mines producing	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)
Dry and siliceous gold ore	88	116,299	21,263	68,471
Dry and siliceous gold-silver ore	33	15,801	3,624	107,075
Dry and siliceous silver ore	52	37,190	1,147	259,378
Copper ore	11	1,231,266	5,027	1,845,783
Lead ore	87	21,248	1,312	93,039
Lead-copper ore	1	3	–	171
Zinc ore	2	1/ 34,100	99	55,393
Zinc-lead ore	46	1,140,027	10,431	3,896,726
Total, lode mines	2/ 281	2,595,934	42,903	6,326,036
Total, placers	48	–	9,821	989
Total, 1949	329	2,595,934	52,724	6,327,025
1948	284	3,020,307	[illegible],091	6,930,716

Source	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore	844,843	84,458	17,577
Dry and siliceous gold-silver ore	9,398	178,124	173,929
Dry and siliceous silver ore	75,416	669,932	803,421
Copper ore	3/ 105,708,559	–	–
Lead ore	38,062	3,746,277	317,721
Lead-copper ore	165	1,051	–
Zinc ore	104,213	1,213,387	5,889,208
Zinc-lead ore	6,441,344	30,098,771	101,188,144
Total, lode mines	3/ 113,222,000	35,992,000	108,390,000
Total, placers	–	–	–
Total, 1949	3/ 113,222,000	35,992,000	108,390,000
1948	4/ 116,504,000	36,822,000	118,190,000

1/ Includes 14,585 tons of zinc slag fumed.

2/ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.

3/ Includes 4,419,019 pounds recovered from precipitates.

4/ Includes 5,503,688 pounds recovered from precipitates.

SILVER BOW COUNTY

Ore production in Silver Bow County in 1949 was 13 percent less than in 1948; output of gold declined 18 percent, silver 8, copper 3, lead 13, and zinc 9. The total value of the five metals was nearly 14 percent below that in 1948 and represented 88 percent of the State total value.

In 1949, the Butte Hill mine and dumps of the Anaconda Copper Mining Co. produced 28 percent of the State gold, 83 percent of the silver, 98 percent of the copper, 45 percent of the lead, 72 percent of the zinc, and 87 percent of the ore.

Production of ore, gold, silver, copper, lead, and zinc in Silver Bow County, 1948-49, in terms of recovered metals

	1948		1949	
	Quantity	Value	Quantity	Value
Ore, short tons..........	2,637,479	....	2,297,584	....
Gold, fine ounces........	19,163	$670,705	15,755	$551,425
Silver, fine ounces......	6,100,232	5,521,018	5,636,112	5,100,966
Copper, pounds...........	115,423,500	25,046,900	111,890,500	22,042,429
Lead, pounds.............	26,448,900	4,734,353	22,979,600	3,630,777
Zinc, pounds.............	105,250,800	13,998,356	95,963,100	11,899,424
Total value..........	....	49,971,332	....	43,225,021

MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. KRUG, Director

FOR RELEASE JUNE 20, 1950.

MINERAL MARKET REPORT
MMS NO. 1873

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN NEVADA, 1949 - FINAL ANNUAL FIGURES

Nevada lead output in 1949, up 9 percent compared with 1948, was the highest in 13 years despite production curtailments due to a severe winter and operational difficulties at many mines resulting from lower prices for the metal after midyear, according to the San Francisco Office, Bureau of Mines, United States Department of the Interior. Zinc production, similarly affected, nevertheless, held at a relatively high level during 1949, surpassing the 1948 yield by 1 percent. With large-scale copper mining dormant in all but one Nevada district the 1949 copper output followed the trend of progressively lower yield begun in 1943 and reversed only during 1947, by falling 16 percent below 1948. The persistency of operators - faced with a fixed price for gold - in striving to revive the State gold mining, resulted in a 17-percent increase in output of the precious metal compared with 1948. Silver, largely a byproduct metal in 1949, registered a 1-percent gain over the previous year. The total value of gold, silver, copper, lead, and zinc recovered from ores, old tailings, and gravels mined at 332 lode mines and 37 placer properties in 1949 was $29,615,777 compared with $34,055,480, the output of 350 lode and 36 placer mines in 1948 - a decrease of 13 percent, due largely to copper. It was divided among the metals as follows: Copper, 51 percent; zinc, 17 percent; gold, 15 percent; lead, 11 percent; and silver, 6 percent.

The value of the metal production herein reported has been calculated at the following prices (corresponding prices for 1948 are shown in parentheses): Gold, $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); zinc, $0.124 per pound ($0.133).

The principal producers of gold, silver, copper, lead, and zinc in Nevada in 1949 were: Gold, Kennecott Copper Corp. (Nevada Mines Division), Robinson district, White Pine County and Getchell Mines, Inc., Getchell mine and Pinson-Ogee lease, Potosi district, Lander County. Silver and lead, Combined Metals Reduction Co., Pioche group, Pioche district, Lincoln County and Copper Canyon Mining Co., Copper Canyon mine, Battle Mountain district, Lander County. Copper, Kennecott Copper Corp. (Nevada Mines Division) and Consolidated Coppermines Corp., Robinson district, White Pine County. Zinc, Combined Metals Reduction Co., Pioche group and Ely Valley Mines, Inc., Ely Valley mine, Pioche district, Lincoln County.

Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Nevada, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Pounds	Value
1945............	92,265	$3,229,275	1,043,380	$741,959	105,190,000	$14,200,650
1946............	90,680	3,173,800	1,250,651	1,010,526	97,232,000	15,751,584
1947............	89,063	3,117,205	1,377,579	1,246,709	99,206,000	20,833,260
1948............	111,532	3,903,620	1,790,020	1,620,058	90,484,000	19,635,028
1949............	130,399	4,563,965	1,800,209	1,629,280	76,116,000	14,994,852

Year	Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	
1945............	12,550,000	$1,079,300	42,914,000	$4,935,110	$24,186,294
1946............	14,350,000	1,564,150	45,298,000	5,526,356	27,026,416
1947............	14,322,000	2,062,368	33,940,000	4,106,740	31,366,282
1948............	19,554,000	3,500,166	40,576,000	5,396,608	34,055,480
1949............	21,252,000	3,357,816	40,886,000	5,069,864	29,615,777

Mine production of gold, silver, copper, lead, and zinc in Nevada, in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January.............	6,815	97,002	3,359	647	1,418
February............	7,497	127,907	2,445	739	2,127
March...............	10,888	175,738	4,362	993	2,297
April...............	12,916	178,304	4,218	1,118	2,402
May.................	10,338	171,665	3,571	1,015	2,103
June................	10,449	152,966	2,827	889	1,549
July................	8,836	132,089	1,629	671	1,294
August..............	11,861	148,973	3,819	956	1,176
September...........	13,357	158,699	3,155	1,137	1,553
October.............	12,469	153,452	2,998	849	1,545
November............	12,001	162,443	2,859	834	1,406
December............	12,972	140,971	2,816	778	1,573
Total: 1949......	130,399	1,800,209	38,058	10,626	20,443
1948......	111,532	1,790,020	45,242	9,777	20,288

Mine production of gold, silver, copper, lead, and zinc in Nevada, by counties, in terms of recovered metals

County	Mines	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
Churchill...	8	3,737	179,992	-	2,200	-	$294,045
Clark.......	26	1,049	24,063	14,000	1,165,300	894,800	356,323
Elko........	28	341	67,578	54,400	1,185,200	57,800	278,241
Esmeralda...	19	8,072	32,306	3,400	129,900	-	332,953
Eureka......	12	106	14,597	2,100	138,500	231,700	67,949
Humboldt....	19	21,596	4,894	7,400	1,500	-	761,984
Lander......	23	22,513	195,604	133,100	2,584,500	960,100	1,518,611
Lincoln.....	25	5,853	812,634	776,500	14,130,700	38,294,700	8,074,494
Lyon........	27	962	3,080	15,400	-	-	39,492
Mineral.....	25	1,543	26,132	4,100	204,200	-	110,728
Nye.........	45	1,846	20,740	3,600	137,600	1,900	106,066
Ormsby......	1	12	533	200	12,900	-	2,979
Pershing....	23	4,715	15,148	3,200	55,400	69,800	196,773
Storey......	14	18,540	233,705	-	400	-	860,478
Washoe......	5	312	129	-	700	-	11,148
White Pine..	69	39,202	169,074	75,098,600	1,503,000	375,200	16,603,513
Total: 1949	1/369	130,399	1,800,209	76,116,000	21,252,000	40,886,000	29,615,777
1948	1/386	111,532	1,790,020	90,484,000	19,554,000	40,576,000	34,055,480

1/ Includes 37 placer mines in 1949, and 36 in 1948.

Ore sold or treated in Nevada in 1949, with content in terms of recovered metals

Source	Ore 1/ 2/ (short tons)	Gold (fine ounces)	Silver (fine ounces)
Dry and siliceous gold ore........	651,667	70,316	203,102
Dry and siliceous gold-silver ore.	74,792	6,402	257,205
Dry and siliceous silver ore......	80,602	1,250	303,316
Copper ore........................	4,897,598	38,135	133,910
Lead ore..........................	19,995	964	252,334
Lead-copper ore...................	103	2	1,266
Zinc ore..........................	72,315	526	3/ 51,311
Zinc-lead ore.....................	189,878	4,861	594,990
Zinc-lead-copper ore..............	63	1	1,099
Total lode mines..........	5,987,013	122,457	1,798,533
Placers...........................	-	7,942	1,676
Total: 1949...............	5,987,013	130,399	3/ 1,800,209
1948...............	7,172,611	111,532	1,790,020

Source	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore........	15,100	1,700	-
Dry and siliceous gold-silver ore.	1,600	3,800	-
Dry and siliceous silver ore......	112,900	2,686,600	960,800
Copper ore........................	4/75,235,500	7,000	-
Lead ore..........................	280,800	4,467,400	643,500
Lead-copper ore...................	4,900	48,600	-
Zinc ore..........................	3/ 120,800	3/ 800,400	3/10,223,500
Zinc-lead ore.....................	339,800	13,205,300	29,048,400
Zinc-lead-copper ore..............	4,600	31,200	9,800
Total: 1949...............	3/4/76,116,000	3/21,252,000	3/40,886,000
1948...............	5/90,484,000	19,554,000	40,576,000

1/ Includes 48,212 tons of old tailings in 1949, and 14,651 tons in 1948.
2/ Excludes tungsten ore.
3/ Includes metal recovered from tungsten ore.
4/ Includes 1,038,400 pounds recovered from precipitates.
5/ Includes 2,055,200 pounds recovered from precipitates.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JUNE 20, 1950.

MINERAL MARKET REPORT
MMS NO. 1874

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN NEW MEXICO, 1949 - FINAL ANNUAL FIGURES

The output of copper, lead, and zinc decreased heavily in New Mexico in 1949, according to the Denver Office, Bureau of Mines, United States Department of the Interior. The 49-percent decline in the price of zinc from March to June, with high production costs continuing, led to the closing by July 15 of all but one of the seven major zinc-producing mines and most of the small-scale operations. The production of zinc for the year decreased 29 percent from 1948 and was the lowest since 1938. The output of lead, the bulk of which comes from mines yielding chiefly zinc, decreased 39 percent. Copper output decreased 26 percent, although the monthly production rate was fairly steady through the year despite a sharp decline in the price of copper. Nearly all the gold and silver production was derived from base-metal ores; the State output of gold decreased 5 percent and silver 29 percent from 1948.

The total value of the State output of the five metals decreased from $46,799,576 in 1948 to $31,029,120 in 1949. The value of copper decreased from $32,414,158 to $21,822,872, zinc from $11,039,532 to $7,277,808, lead from $2,739,774 to $1,470,032, and gold and silver together from $606,112 to $458,408. The average weighted price of copper declined from $0.217 a pound in 1948 to $0.197 in 1949, zinc from $0.133 to $0.124, and lead from $0.179 to $0.158. The price used per ounce of gold was $35 and silver $0.9050505 in both years.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

MINE PRODUCTION BY COUNTIES

Mine production of gold, silver, copper, lead, and zinc in New Mexico in 1949, by counties, in terms of recovered metals

County	Mines producing		Ore sold or treated (short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
Catron.......	1	–	101	28	$980	2,591	$2,345
Dona Ana.....	4	–	1,201	–	–	201	182
Grant........	22	2	6,401,359	1,074	37,590	179,262	162,241
Guadalupe....	1	–	5,526	–	–	3,991	3,612
Hidalgo......	19	–	82,549	1,987	69,545	156,641	141,768
Lincoln......	3	–	91	40	1,400	21	19
Luna.........	4	–	69	–	–	221	200
Otero........	1	–	46	–	–	–	–
Santa Fe.....	4	1	693	21	735	938	849
Sierra.......	10	–	432	48	1,680	2,738	2,478
Socorro......	8	–	47,535	51	1,785	34,251	30,999
Total: 1949	77	3	6,539,602	3,249	113,715	380,855	344,693
1948	91	2	7,733,163	3,414	119,490	537,674	486,622

County	Copper		Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	Short tons	Value	
Catron......	–	–	–	–	–	–	$3,325
Dona Ana....	14	$5,516	2	$632	20	$4,960	11,290
Grant.......	53,289	20,995,866	2,894	914,504	27,020	6,700,960	28,811,161
Guadalupe...	76	29,944	–	–	–	–	33,556
Hidalgo.....	1,935	762,390	381	120,396	36	8,928	1,103,027
Lincoln.....	–	–	1	316	–	–	1,735
Luna........	–	–	19	6,004	–	–	6,204
Otero.......	–	–	5	1,580	–	–	1,580
Santa Fe....	8	3,152	19	6,004	7	1,736	12,476
Sierra......	1	394	39	12,324	–	–	16,876
Socorro.....	65	25,610	1,292	408,272	2,263	561,224	1,027,890
Total: 1949	55,388	21,822,872	4,652	1,470,032	29,346	7,277,808	31,029,120
1948	74,687	32,414,158	7,653	2,739,774	41,502	11,039,532	46,799,576

Mine production of gold, silver, copper, lead, and zinc in New Mexico, by months, in 1949, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January..............	267	34,100	4,658	487	3,230
February.............	264	34,800	4,620	610	3,730
March................	356	48,450	5,220	858	4,315
April................	324	38,420	4,100	599	4,182
May..................	285	39,580	5,020	764	4,290
June.................	394	41,360	5,430	612	3,850
July.................	268	27,250	5,500	296	1,530
August...............	229	25,280	4,130	183	890
September............	199	21,061	3,550	84	856
October..............	176	18,254	3,720	45	862
November.............	253	26,400	4,390	59	800
December.............	234	25,900	5,050	55	811
Total: 1949......	3,249	380,855	55,388	4,652	29,346
1948......	3,414	537,674	74,687	7,653	41,502

LEADING DISTRICTS

The Central district, Grant County, produced most of the State output of copper, lead, and zinc and was also the leading silver producer. The value of the output of metals from this district in 1949 was $28,469,171. The Chino open-pit mine of the Kennecott Copper Corp. at Santa Rita, much the largest producer of copper in the State, produced continuously but at a lower rate than in 1948. The Hanover mine of the Empire Zinc Co. also operated throughout 1949 and was the leading zinc producer. The United States Smelting, Refining & Mining Co. Bayard group, the Kennecott Copper Corp. Oswaldo zinc mine, the Peru Mining Co. Pewabic mine, and the New Mexico Consolidated Mines Co. Kearney mine shut down in June because of the sharp drop in the price of zinc. The American Smelting & Refining Co. suspended production of ore from its Ground Hog group July 15 but continued mine development and worked on constructing a new mill at Deming.

The Lordsburg district, Hidalgo County, produced metals (mainly copper) valued at more than $1,000,000 in 1949. The Banner Mining Co. Bonney-Miser's Chest group was the principal producer of copper. The Atwood mine of S. A. and H. A. McIntosh was a substantial producer of copper ore carrying gold and silver.

The Magdalena district, Socorro County, produced zinc, lead, and silver valued at nearly $1,000,000. The Waldo mine of the American Smelting & Refining Co., the largest district producer in 1948, shut down in June 1949.

In the Burro Mountain district (Grant County), formerly an important producer of copper, the Phelps Dodge Corp. suspended copper-leaching operations at its Burro Mountain mine April 30.

The Eureka, Pinos Altos, and Swartz districts - all in Grant County - each produced metals (mostly lead and zinc) valued at more than $100,000.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman, Secretary **JAMES BOYD, Director**

JUN 2

FOR IMMEDIATE RELEASE

MINERAL MARKET REPORTS
M.M.S. NO. 1875

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

ASPHALT SALES DECLINE 3 PERCENT IN 1949

Total indicated demand, domestic and foreign, for petroleum asphalt was one percent lower in 1949, than in 1948, according to the Bureau of Mines, Department of the Interior. Because of the decreased demand, petroleum refineries reduced their output 6 percent; and imports of petroleum asphalt, lake asphalt, and grahamite were lowered 24 percent. At the same time, stocks of asphalt held at the refineries were reduced 13 percent during 1949, compared with a 50-percent increase in stocks during 1948. Recorded sales were 3 percent lower in 1949, than in 1948.

Petroleum refineries in the United States in 1949, produced 8,910,400 short tons of asphalt; received 958,000 tons by transfers, imports, purchases, and blending of other products; decreased their stocks from 1,028,600 tons at the beginning of the year to 894,200 tons at the end of the year; consumed, transferred, exported, and lost in processing 1,081,600 tons; and sold to domestic consumers 8,921,100 tons. In 1948, they produced 9,439,800 tons; received from other sources 1,401,300 tons; increased stocks from 685,700 tons at the beginning of the year to 1,028,600 tons at the end of the year; consumed, transferred, exported, and lost in processing 1,320,100 tons; and sold to domestic consumers 9,178,100 tons.

Of the total petroleum asphalt sold to domestic consumers, 23 percent in 1949 was manufactured from foreign petroleum (imported mainly from Venezuela, Colombia, and Mexico), compared with 26 percent in 1948. Ninety-nine percent of the asphalt made from foreign petroleum sold in 1948, and all of that sold in 1949, was manufactured in refineries of the East Coast of the United States.

Highway and street construction used (in the form of paving asphalt, paving flux, cut-back asphalts, and asphalt emulsions) 70 percent of the total asphalt sold to domestic consumers by petroleum refineries in 1949, compared with 67 percent in 1948. Although street and highway surfacing and maintenance was apparently 7 percent below the level of 1948, sales of asphalts used primarily in highway and street construction were 2 percent larger in 1949 than in 1948. Sales of paving asphalt for high-type surfacing increased 5 percent in tonnage; and sales of cut-back asphalts, chiefly for highway purposes, were 4 percent higher. If sales of asphalt emulsions by secondary manufacturers are added to refinery sales, emulsion sales decreased one percent in quantity--from 132,211,635 gallons (561,137 tons) in 1948, to 130,669,178

Prepared by A. H. Redfield and S. J. Spencer, International Petroleum Section, Petroleum Economics Branch.

gallons (554,623 tons) in 1949--and increased 7 percent in value from $13,985,901 in 1948, to $14,977,704 in 1949.

Roofing manufacturers made the second-largest demand, absorbing 28 percent of the total sales of asphalt to domestic consumers in 1948, and 26 percent in 1949. Sales of roofing asphalt and roofing flux combined decreased 10 percent from 1948 to 1949.

Reported sales of road oil increased 11 percent in quantity, but decreased 2 percent in value from 1948 to 1949. They totaled 6,115,000 barrels valued at $17,870,000 in 1948, and 6,768,000 barrels valued at $17,485,000 in 1949.

Bituminous rock shared in the increased demand which raised sales of paving asphalt. Its sales increased from 1,084,004 tons valued at $3,634,917 in 1948, to 1,150,931 tons valued at $4,264,989 in 1949.

Gilsonite was in less demand in 1949 than in 1948. Sales by producers in northeastern Utah decreased from 52,122 tons valued at $1,390,713 in 1948, to 51,462 tons valued at $1,303,584 in 1949.

Imports of petroleum asphalt totaled 213,967 short tons valued at $2,614,953 in 1949, compared with 283,895 tons (revised figure) valued at $2,419,452 (revised figure) in 1948. The Netherlands Antilles were virtually the sole source of these imports in both years. Imports of natural asphalt, chiefly of lake asphalt from Trinidad, decreased from 4,857 short tons (revised figure) valued at $167,264 (revised figure) in 1948, to 4,109 tons valued at $87,693 in 1949.

Exports of petroleum asphalt decreased from 269,958 short tons valued at $8,984,509 in 1948, to 234,456 tons valued at $7,402,162 in 1949. Decreased shipments to Europe accounted principally for the decline, offsetting larger shipments to eastern Asia and to South America, especially Brazil.

Exports of natural asphalt, unmanufactured, increased from 13,682 short tons valued at $559,462 in 1948 to 16,672 tons valued at $823,143 in 1949. Of the 1949 exports, 66 percent went to Europe, notably to the United Kingdom, France, Germany, Italy, Denmark, Belgium, Sweden, and Switzerland. Canada received 15 percent of the total, and Mexico 4 percent. In 1948, the two Americas accounted for 52 percent of these exports.

Asphalt and Asphaltic Material (Exclusive of Road Oil) Sold at Petroleum Refineries to Domestic Consumers in the United States in 1949, by Varieties
(Short tons)

7756

	East Coast	Appala-chian	Indiana Illinois Kentucky	Oklahoma Kansas Missouri	Texas	Louisiana and Arkansas	Rocky Mountain	California	Total Short Tons	Total Value
Solid and semisolid products of less than 200 penetration:										
Asphalt for--										
Paving	879,494	140,269	477,211	133,386	238,985	387,016	108,373	637,772	3,002,506	$ 54,396,388
Roofing	735,078	121,418	193,965	134,161	110,070	226,935	5,696	127,711	1,655,034	30,030,399
Waterproofing	26,590	1,884	45,039	11,674	5,324	18,499	761	15,372	125,143	2,685,231
Blending with rubber	12,053	1,927	170	1,797	---	---	786	1,317	18,050	426,290
Briquetting	17,092	492	46,770	72,892	---	---	8,918	1,311	147,475	2,509,226
Mastic and mastic cake	3,625	308	---	---	827	---	27	---	4,787	109,071
Pipe coatings	4,677	2,306	1,616	751	1,783	---	22	12,220	23,375	601,957
Moulding compounds	8,339	1,505	35,187	839	4,076	---	12	4,194	54,152	936,669
Miscellaneous uses	167,800	919	36,107	53,202	375	26,457	7,969	9,346	302,175	5,729,484
	1,854,748	271,028	836,065	408,702	361,440	658,907	132,564	809,243	5,332,697	$97,424,715
Semisolid and liquid products of more than 200 penetration:										
Flux for--										
Paving	30,889	1,345	14,415	3,356	66,964	46,355	15,493	149,788	328,605	$ 5,155,860
Roofing	34,578	269	276,760	79,944	77,363	28,212	1,394	197,917	696,437	9,628,141
Waterproofing	1,926	---	---	---	---	---	24	---	1,950	37,732
Mastic	---	---	---	3,139	---	2,000	26	1,403	6,568	122,329
Cut-back asphalts:										
Rapid-curing	327,376	67,390	189,053	78,148	314,386	82,907	71,974	77,081	1,208,315	24,133,639
Medium-curing	225,840	12,335	232,163	260,390	85,489	74,364	129,292	162,400	1,182,273	22,218,491
Emulsified asphalts and fluxes	602	4,089	---	1,678	10,762	---	2,423	54,597	74,151	1,495,574
Paints, enamels, japans, and lacquers	14,678	27,533	8,675	1	1,688	---	---	1,247	53,822	1,573,185
Other liquid products	122	---	12,359	6,295	---	5,440	11,739	321	36,276	648,065
	636,011	112,961	733,425	432,951	556,652	239,278	232,365	644,754	3,588,397	$65,013,016
Total short tons	2,490,759	383,989	1,569,490	841,653	918,092	898,185	364,929	1,453,997	8,921,094	---
Total value	$51,322,977	$8,199,775	$27,504,696	$13,657,223	$16,810,764	$15,364,156	$5,727,228	$23,850,912	---	$162,437,731

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JUNE 22, 1950.

MINERAL MARKET REPORT
MMS NO. 1876

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN CALIFORNIA, 1949

FINAL ANNUAL FIGURES 1/

California lead production in 1949 reached a high level exceeded only in the peak year 1899 and in the war year 1917, according to the San Francisco Office, Bureau of Mines, United States Department of the Interior. Despite production curtailments at zinc mines after midyear, output of the metal surpassed the 1948 yield by 35 percent, reversing the downward trend begun in 1946. Gold production in 1949 (including a relatively small quantity in "natural gold" and amalgam sold in the open market), owing to notably lower output from placer mines, was 1 percent below 1948; whereas silver and copper, largely byproduct metals in 1949 were, respectively, 8 percent and 35 percent above the 1948 outputs. The total value of the five metals in 1949 was $20,616,562, an increase of 2 percent over $20,294,093 in 1948. It was divided among the metals as follows: Gold, 71 percent; lead, 16 percent; zinc, 9 percent; silver, 3 percent; and copper, 1 percent.

The value of the metal production herein reported has been calculated at the following prices (corresponding prices for 1948 are shown in parentheses): Gold, $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 per pound ($0.217); lead, $0.158 per pound ($0.179); and zinc, $0.124 per pound ($0.133).

The principal producers of gold, silver, copper, lead, and zinc by mines in California in 1949 were: Gold, the bucket-line dredges of the Natomas Co., Folsom district, Sacramento County; silver, lead and zinc, the Darwin group of mines operated by Anaconda Copper Mining Co., Coso district, Inyo County; and copper, the Afterthought mine, operated by Coronado Copper & Zinc Co., Cow Creek district, Shasta County.

Inyo County was the largest contributor to the 1949 metal-mining output in California, followed in order by Nevada County and Sacramento County. The Grass-Valley-Nevada City district, Nevada County, lead the other districts by producing 19 percent of the State total value of the five metals. The Folsom district, Sacramento County ranked second with 17 percent, followed by the Coso district, Inyo County with 14 percent of the State's total value of the five metals.

Prepared by R. B. Maurer, San Francisco Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

1/ In cooperation with the California Department of Natural Resources, Division of Mines.

Mine production of gold, silver, copper, lead, and zinc in California in 1949, by months, in terms of recovered metal

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January.................	30,522	62,090	78	805	614
February................	32,471	73,047	71	1,001	818
March...................	35,069	72,525	109	930	1,077
April...................	36,044	81,968	67	877	963
May.....................	33,210	78,382	80	849	831
June....................	35,622	65,808	64	901	641
July....................	34,396	30,096	27	444	96
August..................	35,494	30,069	35	350	158
September...............	34,658	54,973	30	702	293
October.................	36,921	80,616	35	1,108	654
November................	35,596	75,457	24	1,121	528
December................	37,228	78,849	29	1,230	536
Total: 1949........	417,231	783,880	649	10,318	7,209
1948........	421,473	724,771	481	9,110	5,325

Mine production of gold, silver, copper, lead, and zinc in California, 1949, by counties, in terms of recovered metals

County	Mines producing 1/		Gold				Silver			
			Fine ounces		Total		Fine ounces		Total	
	Lode	Placer	Lode	Placer	Fine ounces	Value	Lode	Placer	Fine ounces	Value
Amador..............	10	11	18,551	671	19,222	$672,770	4,120	92	4,212	$3,812
Butte...............	2	10	19	23,435	23,454	820,890	3	1,571	1,574	1,425
Calaveras...........	11	4	2,839	184	3,023	105,805	9,012	22	9,034	8,176
El Dorado...........	8	12	1,071	2,043	3,114	108,990	482	305	787	712
Fresno & Humboldt 2/	–	4	–	222	222	7,770	–	32	32	29
Imperial............	1	–	32	–	32	1,120	9	–	9	8
Inyo................	44	1	4,003	9	4,012	140,420	591,391	–	591,391	535,239
Kern................	25	3	5,447	267	5,714	199,990	17,490	65	17,555	15,888
Los Angeles.........	3	2	92	157	249	8,715	99	24	123	111
Madera..............	2	8	29	1,204	1,233	43,155	8	334	342	309
Mariposa............	21	7	2,777	3,904	6,681	233,835	853	869	1,722	1,558
Merced..............	–	3	–	12,357	12,357	432,495	–	1,139	1,139	1,031
Modoc...............	1	–	9	–	9	315	3	–	3	3
Mono & Monterey 2/..	3	–	45	–	45	1,575	1,166	–	1,166	1,055
Nevada..............	12	12	3/114,110	2,373	3/116,483	3/4,076,905	3/34,686	276	3/34,962	3/31,642
Placer..............	3	15	946	498	1,444	50,540	1,292	56	1,348	1,220
Plumas..............	7	5	33	647	680	23,800	18	62	80	72
Riverside...........	6	–	47	–	47	1,645	951	–	951	861
Sacramento..........	1	12	30	105,746	105,776	3,702,160	5	4,929	4,934	4,466
San Bernardino......	32	3	2,054	496	2,550	89,250	26,148	89	26,237	23,746
San Diego...........	1	–	3	–	3	105	2	–	2	2
San Francisco.......	–	1	–	3	3	105	–	1	1	1
San Joaquin & Stanislaus 2/......	–	6	–	15,328	15,328	536,480	–	1,414	1,414	1,280
Shasta..............	13	4	663	7,345	8,008	280,280	75,637	807	76,444	69,185
Sierra..............	5	15	13,242	258	13,500	472,500	2,573	33	2,606	2,359
Siskiyou............	12	22	204	15,014	15,218	532,630	35	1,952	1,987	1,798
Trinity.............	6	20	82	3,156	3,238	113,330	24	399	423	383
Tulare..............	–	1	–	26	26	910	–	4	4	4
Tuolumne............	12	1	355	17	372	13,020	76	2	78	71
Yuba................	1	8	(3)	55,188	3/ 55,188	3/1,931,580	(3)	3,320	3/ 3,320	3/3,005
Total: 1949....	242	190	166,683	250,548	417,231	14,603,085	766,083	17,797	783,880	709,451
1948....	241	195	135,917	285,556	421,473	14,751,555	703,289	21,482	724,771	655,954

Mine production by counties, continued

County	Copper		Lead		Zinc		Total value
	Pounds	Value	Pounds	Value	Pounds	Value	
Amador	300	$59	100	$16	–	–	$676,657
Butte	–	–	–	–	–	–	822,315
Calaveras	76,500	15,070	33,300	5,261	726,700	$90,111	224,423
El Dorado	–	–	–	–	–	–	109,702
Fresno & Humboldt	–	–	–	–	–	–	7,799
Imperial	–	–	–	–	–	–	1,128
Inyo	421,300	82,996	19,659,100	3,106,138	8,952,200	1,110,073	4,974,866
Kern	–	–	–	–	–	–	215,878
Los Angeles	–	–	–	–	–	–	8,826
Madera	–	–	–	–	–	–	43,464
Mariposa	200	39	–	–	–	–	235,432
Merced	–	–	–	–	–	–	433,526
Modoc	–	–	–	–	–	–	318
Mono & Monterey	100	20	300	47	–	–	2,697
Nevada	–	–	900	142	–	–	3/ 4,108,689
Placer	–	–	–	–	–	–	51,760
Plumas	3,500	690	–	–	–	–	24,562
Riverside	5,100	1,005	31,500	4,977	–	–	8,488
Sacramento	–	–	–	–	–	–	3,706,626
San Bernardino	135,500	26,694	320,700	50,671	618,300	76,669	267,030
San Diego	–	–	–	–	–	–	107
San Francisco	–	–	–	–	–	–	106
San Joaquin & Stanislaus	–	–	–	–	–	–	537,760
Shasta	653,900	128,818	589,900	93,204	4,120,800	510,979	1,082,466
Sierra	–	–	–	–	–	–	474,859
Siskiyou	1,600	315	–	–	–	–	534,743
Trinity	–	–	–	–	–	–	113,713
Tulare	–	–	–	–	–	–	914
Tuolumne	–	–	200	32	–	–	13,123
Yuba	–	–	–	–	–	–	3/ 1,934,585
Total: 1949	1,298,000	255,706	20,636,000	3,260,488	14,418,000	1,787,832	20,616,562
1948	962,000	208,754	18,220,000	3,261,380	10,650,000	1,416,450	20,294,093

1/ Excludes itinerant prospectors, snipers, high-graders, and others who gave no evidence of legal right to property. 2/ Combined to avoid disclosure of individual output. 3/ Yuba County lode gold and lode silver included with Nevada County.

Ore sold or treated in California in 1949, with content in terms of recovered metals

Source	Ore 1/ (short tons)	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore..........	374,481	161,690	59,108	92,000	5,200	-
Dry and siliceous gold-silver ore.	2,305	387	13,916	400	19,000	-
Dry and siliceous silver ore.......	2,141	6	6,122	100	12,000	-
Copper ore..........	250	2/ 64	2/ 3/ 28,442	2/3/4/367,500	-	-
Lead ore............	37,553	3,738	305,934	103,000	12,572,300	1,120,100
Lead-copper ore.....	106	2	577	2,200	18,500	-
Zinc ore............	21,078	641	83,509	631,900	632,900	5,464,700
Zinc-lead ore.......	56,992	155	268,475	100,900	7,376,100	7,833,200
Total lode mines:						
1949............	5/494,906	2/166,683	2/ 3/ 766,083	2/3/4/1,298,000	20,636,000	14,418,000
1948............	5/526,776	2/3/135,917	2/ 3/ 703,289	2/3/6/ 962,000	18,220,000	10,650,000

1/ Includes 2,949 tons of old tailings in 1949 and 10,883 tons in 1948.
2/ Includes metal recovered from tungsten ore.
3/ Includes metal recovered from pyritic ore (residue).
4/ Includes 60,700 pounds from precipitates and 2,000 pounds from furnace matte.
5/ Excludes tungsten ore.
6/ Includes 8,800 pounds from precipitates.

Mine production of gold, silver, copper, lead, and zinc in California, 1945-49, in terms of recovered metals

Year	Gold		Silver		Copper	
	Fine ounces	Value	Fine ounces	Value	Short tons	Value
1945........	147,938	$5,177,830	986,798	$701,723	6,473	$1,747,710
1946........	356,824	12,488,840	1,342,651	1,084,862	4,240	1,373,760
1947........	431,415	15,099,525	1,597,442	1,445,685	2,407	1,010,940
1948........	421,473	14,751,555	724,771	655,954	481	208,754
1949........	417,231	14,603,085	783,880	709,451	649	255,706

Year	Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	
1945.........	7,224	$1,242,528	9,923	$2,282,290	$11,152,081
1946.........	9,923	2,163,214	6,877	1,677,988	18,788,664
1947.........	10,080	2,903,040	5,415	1,310,430	21,769,620
1948.........	9,110	3,261,380	5,325	1,416,450	20,294,093
1949.........	10,318	3,260,488	7,209	1,787,832	20,616,562

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN Secretary JAMES BOYD Director

FOR RELEASE JUNE 23, 1950

MINERAL MARKET REPORT
MMS NO. 1877

POTASH INDUSTRY IN THE UNITED STATES IN 1949

A strike in the potash mines of the Carlsbad district of New Mexico in November and December 1949 caused a slight reversal in the long upward trend of the production and sales of the potash industry of the United States. According to reports by producers to the Bureau of Mines, United States Department of the Interior, the production of marketable potassium salts dropped to 2,056,609 short tons, a decrease of 81,884 tons from the 1948 peak of 2,138,493 tons. The equivalent K_2O content decreased 21,486 tons from that of the previous year. Sales likewise declined, but remained above two million tons (2,062,789 tons), with the K_2O content (1,120,653 tons) 22,686 tons lower. The total value of the sales ($35,105,799 in 1949) was nearly nine hundred thousand dollars less than in 1948, but the average value per ton of the potassium salts sold in 1949 was $0.27 more. Stocks in producers' hands at the end of 1949 reached a new low figure of 9,066 tons K_2O. Both imports and exports declined in quantity and value in 1949 from 1948. Apparent domestic consumption of potash (K_2O) in 1949 (1,070,312 tons) was 30,475 tons below the 1948 figure.

Production of the 60-62 percent K_2O minimum grade of the muriate of potash and of manure salts was less in 1949 than in 1948, but there was a considerable increase in that of the lower grade muriate. The production of sulfate of potash and sulfate of potash-magnesia continued to decline.

The Western States remain the dominant factor in the domestic production of potash. California, New Mexico and Utah yielded virtually all of the 1949 output, the largest part coming from the deeply buried deposits of sylvite and langbeinite, of Permian age, in the Carlsbad region, southeastern New Mexico. The eastern United States supplied only a small quantity - from Maryland, Michigan and Pennsylvania.

The strike that caused the decline in the domestic production and sales of potash was called November 19, 1949, at the three potash-producing plants of the Carlsbad region, New Mexico, by the C.I.O. Mine, Mill, and Smelter Workers' Union Local 415, and output and shipments stopped. The strike continued until January 31, 1950, but some potash was produced and shipped during the later part of January. A little is said to have been moved from one of the refineries in December 1949.

Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

Salient statistics of potash industry in the United States, 1947-49

	1947	1948	1949
Production:			
Potassium salts (marketable)..short tons..	1,905,776	2,138,493	2,056,609
Approximate equivalent, K_2O....do......	1,029,875	1,139,881	1,118,395
Sales by producers:			
Potassium salts................. do.......	1,953,307	2,148,807	2,062,789
Approximate equivalent, K_2O... do	1,053,266	1,143,339	1,120,653
Value at plant........................	$34,716,051	$35,998,758	$35,105,799
Average per ton......................	$17.77	$16.75	$17.02
Imports:			
Fertilizer materials......... short tons..	47,815	47,515	36,583
Approximate equivalent, K_2O... do......	25,266	26,002	17,696
Value.................................	$1,887,771	$2,340,442	$1,571,648
Chemical materials........... short tons..	3,228	5,375	7,136
Approximate equivalent, K_2O... do......	712	1,179	1,520
Value.................................	$587,580	1/$723,105	$786,909
Total imports................ short tons..	51,043	52,890	43,719
Approximate equivalent, K_2O....do......	25,978	27,181	19,216
Value.................................	$2,475,351	1/$3,063,547	$2,358,557
Exports:			
Fertilizer materials......... short tons..	102,939	104,176	111,156
Approximate equivalent, K_2O 2/.do......	57,337	58,026	61,914
Value.................................	$3,251,645	$3,498,240	$3,818,006
Chemical materials........... short tons..	21,970	23,892	15,598
Approximate equivalent, K_2O 2/.do......	10,765	11,707	7,643
Value.................................	$5,434,462	$4,790,715	$3,292,048
Total exports................ short tons..	124,909	128,068	126,754
Approximate equivalent, K_2O 2/.do......	68,102	69,733	69,557
Value.................................	$8,686,107	$8,288,955	$7,110,054
Consumption:			
Apparent consumption: 3/			
Potassium salts........... short tons	1,879,441	2,073,629	1,979,754
Approximate equivalent, K_2O..do......	1,011,142	1,100,787	1,070,312

1/ Revised figure.
2/ Estimate by Bureau of Mines.
3/ Quantity sold by producers, plus imports, minus exports.

Potassium salts produced in the United States, 1947-49, by grades, in short tons

Grade	1947	1948	1949
Muriate of potash:			
60-62 percent K_2O minimum1/ 2/............	1,394,202	1,523,937	1,513,128
48-50 percent K_2O minimum................	125,120	145,675	172,475
Manure salts................................	174,145	260,339	177,315
Sulfate of potash and sulfate of potash-magnesia..................................	212,309	208,542	193,691
Total.................................	1,905,776	2,138,493	2,056,609

1/ Includes refined potash.
2/ Includes some 93-96 percent KCl.

The potash-producing companies in the United States in 1949, by States, were as follows:

California:

The American Potash & Chemical Corp., 3030 West Sixth St., Los Angeles 54, Calif. (plant at Trona, on Searles Lake, Calif.).

Maryland:

North American Cement Corp., 41 East Forty-Second St., New York, N. Y. (plant at Security, Md.).

Michigan:

The Dow Chemical Co., Midland, Mich. (brine wells and plant near Midland, Mich.).

New Mexico:

International Minerals & Chemical Corp., 20 North Wacker Drive, Chicago, Ill. (mine and plant near Carlsbad, N. Mex.).

Potash Company of America, Carlsbad, N. Mex. (mine and plant near Carlsbad, N. Mex.).

United States Potash Co., Inc., 30 Rockefeller Plaza, New York, N. Y. (mine and plant near Carlsbad, N. Mex.).

Pennsylvania:

Publicker Industries, Inc., 1429 Walnut Street, Philadelphia 2, Penna.

Utah:

Bonneville, Ltd., 540 West Seventh South, Salt Lake City 4, Utah (plant near Wendover, Utah).

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

JUN
UNIVERSITY OF ILLINOIS

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JUNE 22, 1950.

MINERAL MARKET REPORT
MMS NO. 1878.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN COLORADO, 1949 - FINAL ANNUAL FIGURES

Colorado lead and zinc outputs established long-time records in 1949 despite sharp declines in base-metal prices that caused one of the large producers and a number of small-scale operations to shut down before the middle of the year, according to the Denver Office, Bureau of Mines, United States Department of the Interior. The production of lead increased 7 percent and zinc 6 percent in quantity over 1948, making the lead output the highest since 1927 and zinc since 1917. In the San Juan region, increases in lead production of 39 percent in San Miguel County, 17 percent in San Juan County, and 3 percent in Ouray County much more than offset a 43-percent decrease in Dolores County; and increases in zinc in San Miguel and Ouray Counties of 72 percent and 9 percent, respectively, overcame decreases of 57 percent in Dolores County and 4 percent in San Juan County. There were moderate increases in lead and zinc production in Eagle and Lake Counties, a small decrease in Summit County, a material decrease in Gunnison County, and a large increase in Mineral County. The State production of copper, nearly all derived from ores mined chiefly for zinc, lead, and precious metals, increased 5 percent.

Gold production decreased 34 percent from 1948. Virtually all mining operations in the famous Cripple Creek district shut down in February to await completion of a new custom mill being built there to replace the Golden Cycle mill at Colorado Springs as a market for Cripple Creek ore. Other gold districts either remained inactive or had a low production, and gold output decreased in most of the principal districts producing gold along with silver and base metals. The State silver production decreased slightly.

The value of each metal for 1949, with comparable figures for 1948 in parentheses, was as follows: Gold, \$3,591,630 (\$5,418,070); silver, \$2,620,018 (\$2,725,117); copper, \$946,782 (\$997,332); lead, \$8,485,548 (\$9,001,194), and zinc \$11,830,344 (\$12,013,624), a total of \$27,474,322 compared with \$30,155,337 in 1948. The metal prices used per ounce of gold and silver were \$35 and \$0.9050505, respectively, in both years. The average weighted price of copper dropped from \$0.217 per pound in 1948 to \$0.197 in 1949, lead from \$0.179 to \$0.158, and zinc from \$0.133 to \$0.124.

Prepared by A. J. Martin, Denver Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1949, by months, in terms of recovered metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	10,110	204,373	164	2,035	3,139
February	7,698	178,750	150	1,907	3,918
March	8,531	225,200	205	2,211	4,496
April	6,598	217,420	148	2,316	3,985
May	7,444	225,632	205	2,227	3,995
June	8,300	228,425	186	2,055	3,987
July	7,684	249,990	213	2,199	3,710
August	9,473	316,180	266	2,584	4,425
September	10,993	294,904	225	2,482	3,960
October	8,218	251,200	216	2,231	3,900
November	8,848	251,650	210	2,306	4,220
December	8,721	251,162	215	2,300	3,968
Total: 1949	102,618	2,894,886	2,403	26,853	47,703
1948	154,802	3,011,011	2,298	25,143	45,164

Mine production of gold, silver, copper, lead, and zinc in Colorado in 1949, by counties, in terms of recovered metals

County	Mines producing		Ore sold or treated (short tons)	Gold (lode and placer)		Silver (lode and placer)	
	Lode	Placer		Fine ounces	Value	Fine ounces	Value
Adams........	–	4	–	775	$27,125	116	$105
Boulder......	12	1	16,231	2,195	76,825	78,245	70,816
Chaffee......	8	2	844	103	3,605	3,572	3,233
Clear Creek..	33	2	23,011	3,071	107,485	86,289	78,096
Custer.......	4	–	1,211	19	665	16,061	14,536
Dolores......	6	–	20,450	79	2,765	80,032	72,433
Eagle........	4	–	177,671	766	26,810	216,589	196,024
Fremont......	1	–	37	20	700	31	28
Gilpin.......	9	6	1,274	135	4,725	610	552
Gunnison.....	5	–	15,802	64	2,240	60,147	54,436
Hinsdale.....	12	–	365	23	805	3,339	3,022
Jefferson....	–	3	–	32	1,120	9	8
Lake.........	25	1	138,941	17,996	629,860	223,190	201,998
La Plata.....	5	–	38	217	7,595	2,286	2,069
Mineral......	6	–	38,262	779	27,265	263,867	238,813
Montezuma....	1	–	8	16	560	73	66
Montrose.....	–	1	–	1	35	–	–
Ouray........	19	–	48,290	2,824	98,840	206,667	187,044
Park.........	7	4	3,030	10,205	357,175	14,829	13,421
Pitkin.......	3	–	6,197	–	–	32,692	29,588
Rio Grande...	1	–	2,750	82	2,870	201	182
Saguache.....	11	–	4,767	98	3,430	21,970	19,884
San Juan.....	31	–	244,368	11,549	404,215	584,068	528,611
San Miguel...	7	2	370,880	35,789	1,252,615	655,646	593,393
Summit.......	32	1	124,711	2,320	81,200	341,368	308,955
Teller.......	13	–	23,217	13,460	471,100	2,989	2,705
Total: 1949.	255	27	1,262,355	102,618	3,591,630	2,894,886	2,620,018
1948.	271	23	1,438,119	154,802	5,418,070	3,011,011	2,725,117

Mine production by counties - continued

County	Copper		Lead		Zinc		Total value
	Short tons	Value	Short tons	Value	Short tons	Value	
Adams..........	-	-	-	-	-	-	$27,230
Boulder........	8	$3,152	120	$37,920	-	-	188,713
Chaffee........	-	-	48	15,168	12	$2,976	24,982
Clear Creek....	17	6,698	746	235,736	416	103,168	531,183
Custer.........	-	-	52	16,432	34	8,432	40,065
Dolores........	33	13,002	1,388	438,608	1,354	335,792	862,600
Eagle..........	202	79,588	1,600	505,600	17,450	4,327,600	5,135,622
Fremont........	-	-	-	-	-	-	728
Gilpin.........	-	-	9	2,844	-	-	8,121
Gunnison.......	17	6,698	1,293	408,588	1,504	372,992	844,954
Hinsdale.......	4	1,576	49	15,484	15	3,720	24,607
Jefferson......	-	-	-	-	-	-	1,128
Lake...........	115	45,310	5,080	1,605,280	6,455	1,600,840	4,083,288
La Plata.......	-	-	-	-	-	-	9,664
Mineral........	37	14,578	1,162	367,192	671	166,408	814,256
Montezuma......	-	-	-	-	-	-	626
Montrose.......	-	-	-	-	-	-	35
Ouray..........	173	68,162	1,521	480,636	1,374	340,752	1,175,434
Park...........	3	1,182	119	37,604	253	62,744	472,126
Pitkin.........	-	-	82	25,912	49	12,152	67,652
Rio Grande.....	2	788	-	-	-	-	3,840
Saguache.......	21	8,274	319	100,804	369	91,512	223,904
San Juan.......	304	119,776	3,513	1,110,108	1,599	396,552	2,559,262
San Miguel.....	1,400	551,600	5,414	1,710,824	6,004	1,488,992	5,597,424
Summit.........	67	26,398	4,338	1,370,808	10,144	2,515,712	4,303,073
Teller.........	-	-	-	-	-	-	473,805
Total: 1949..	2,403	946,782	26,853	8,485,548	47,703	11,830,344	27,474,322
1948..	2,298	997,332	25,143	9,001,194	45,164	12,013,624	30,155,337

LEADING COUNTIES

San Miguel County ranked first in production of gold, silver, copper, and lead, and fourth in zinc; its output of the five metals was valued at $5,597,424. The Treasury Tunnel-Black Bear (Idarado) and Smuggler Union-Montana (Telluride Mines, Inc.) groups were large producers, and the Silver Bell mine contributed substantially to the output.

Eagle County ranked first in zinc production and had an output of the five metals valued at $5,135,622. The Eagle mine at Gilman continued to be the largest producer of zinc in the State and also produced gold, silver, copper, and lead.

Summit County, second-largest in zinc output and third in lead, produced gold, silver, copper, lead, and zinc valued at $4,303,073. The principal producer was the Victory group of the American Smelting & Refining Co. at Kokomo.

Lake County's output of the five metals was valued at $4,083,288. This county ranked second in gold and lead production and third in zinc. The Resurrection mine was the largest producer.

San Juan County ranked second in silver production and had an output of the five metals valued at $2,599,262. The Shenandoah-Dives-Mayflower-Silver Lake group was the principal producer.

Ouray County's output was valued at $1,175,434. The Camp Bird mine (King Lease) was the largest producer of all five metals.

Other counties producing gold, silver, copper, lead, and zinc valued at more than $500,000, with the names of the principal-producing mines in parentheses, were: Dolores, $862,600 (Rico Argentine Mining Co. group); Gunnison, $844,954 (Callahan Zinc-Lead Co. Akron-Erie group); Mineral, $814,256 (Emperius Mining Co. group); and Clear Creek, $531,183 (Gold Mines Consolidated Terrible-Dunderberg group and Leroy Giles & Co. Dixie mine).

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE JUNE 19, 1950

MINERAL MARKET REPORT
M.M.S. NO. 1879

COKE AND COAL-CHEMICAL MATERIALS IN 1949 1/

The production of coke in the United States in 1949 decreased 15 percent from the record established in 1948 according to the Bureau of Mines, United States Department of the Interior. This drastic reduction was due principally to (1) slackening in steel demand in the second quarter of the year, (2) initiation of a 3-day work week at bituminous-coal mines in July, and (3) complete work stoppages for various periods in both the steel and bituminous-coal industries in the last quarter. The rate of coke production at oven-coke plants started to decline slightly in the last half of March and dropped to the lowest figure since May 1946 in October because the steel strike beginning at midnight September 30 forced virtually all "furnace" oven-coke plants to bank their ovens until a new management-labor contract was negotiated about the middle of November. As a result annual oven-coke production declined 12 percent from the 1948 total. Beehive-coke operations were affected to an even greater extent as the 3-day work week, beginning in July, caused practically all of the active plants to suspend operations for the rest of the year and production dropped 48 percent.

Construction of new coke ovens continued at a rapid pace in 1949 and 469 new ovens with an annual coke capacity of 2,275,300 tons were completed and placed in operation. Attention is directed to the fact that in spite of all the new construction, the total number and annual coke capacity of slot-type ovens in existence on December 31 were lower than at the beginning of the year. It is evident that new construction did not keep pace with obsolescence and old oven failures. Thus, if oven-coke capacity is to be maintained at the current or slightly higher level, construction of replacement and new capacity will have to be continued on a large scale because of the great number of ovens 25 years or older (table 8). The large number of slot-type coke ovens under construction at the close of the year shown in table 9 is indicative that oven-coke plant operators are taking vigorous action to meet future coke requirements.

Production of the principal coal-chemical materials--gas, tar, ammonia, and crude light oil--which invariably accompany the production of oven coke all showed decreases when compared with 1948 figures. Coke-oven gas production declined 11 percent; tar, 9 percent; ammonia in terms of sulfate equivalent, 9 percent; and crude light oil, 11 percent. It is to be noted, however, that although the total production of these materials decreased, the average yields per ton of coal carbonized increased slightly, indicating an improvement in coal quality. The total value of coke and breeze produced and coal-chemical materials sold exceeded a billion dollars for the third consecutive year.

1/ Selected tables showing final statistics of the coke industry. The complete report, released as a chapter of Minerals Yearbook, 1949, will be distributed to the regular mailing list.

Prepared by Maxine M. Otero, J. A. DeCarlo, and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Economics Branch, Fuels and Explosives Division.

TABLE 1. - Salient statistics of the coke industry in the United States in 1949

	Slot-type ovens	Beehive ovens	Total
Coke produced -			
At merchant plants:			
Net tons	12,112,922	(1)	
Value	$181,084,964		
At furnace plants:			
Net tons	48,109,559		
Value	$617,707,105		
Total:			
Net tons	60,222,481	3,414,948	63,637,429
Value	$798,792,069	$43,945,627	$842,737,696
Screenings or breeze produced:			
Net tons	4,929,086	59,494	4,988,580
Value	$16,935,002	$129,436	$17,064,438
Coal charged into ovens:			
Bituminous:			
Net tons	85,881,576	5,354,495	91,236,071
Value	$732,076,635	$29,043,896	$761,120,531
Average per ton	$8.52	$5.42	$8.34
Anthracite:			
Net tons	172,825	....	172,825
Value	$1,269,973	....	$1,269,973
Average per ton	$7.35	....	$7.35
Total:			
Net tons	86,054,401	5,354,495	91,408,896
Value	$733,346,608	$29,043,896	$762,390,504
Average per ton	$8.52	$5.42	$8.34
Average yield in percent of total coal charged:			
Coke	69.98	63.78	69.62
Breeze (at plants actually recovering)	5.76	3.53	5.72
Ovens:			
In existence January 1	15,139	14,078	29,217
In existence December 31	15,104	13,662	28,766
Dismantled during year	504	647	1,151
In course of construction December 31	562	....	562
Annual coke capacity December 31 .... net tons	73,710,100	8,672,200	82,382,300
Coke used by producer -			
In blast furnaces:			
Net tons	35,046,393	67,518	35,113,911
Value	$451,981,030	$1,137,134	$453,118,164
In foundries:			
Net tons	80,395	....	80,395
Value	$1,230,026	....	$1,230,026
To make producer gas:			
Net tons	790,910	....	790,910
Value	$9,538,902	....	$9,538,902
To make water gas:			
Net tons	1,313,785	....	1,313,785
Value	$16,167,896	....	$16,167,896
For other purposes:			
Net tons	356,298	1,779	358,077
Value	$3,874,475	$25,102	$3,899,577
Coke sold -			
To financially affiliated companies -			
For blast-furnace use:			
Net tons	10,656,809	1,094,907	11,751,716
Value	$135,672,369	$12,324,470	$147,996,839
For foundry use:			
Net tons	52,433	....	52,433
Value	$1,158,472	....	$1,158,472
For manufacture of water gas:			
Net tons	721,076	....	721,076
Value	$9,867,867	....	$9,867,867
For other purposes:			
Net tons	192,713	554	193,267
Value	$2,573,912	$8,045	$2,581,957
To other consumers -			
For blast-furnace use:			
Net tons	2,950,619	1,698,607	4,649,226
Value	$41,574,447	$22,580,450	$64,154,897
For foundry use:			
Net tons	2,446,160	199,880	2,646,040
Value	$48,241,594	$3,050,392	$51,291,986
For manufacture of water gas:			
Net tons	1,267,885	114,973	1,382,858
Value	$17,135,440	$1,609,793	$18,745,233
For other industrial use:			
Net tons	1,452,791	199,908	1,652,699
Value	$20,258,191	$2,706,581	$22,964,772
For domestic use:			
Net tons	2,740,987	14,853	2,755,840
Value	$37,014,772	$175,269	$37,190,041

(Continued on next page)

TABLE 1. - Salient statistics of the coke industry in the United States in 1949 (Continued)

	Slot-type ovens	Beehive ovens	Total
Disposal of screenings or breeze:			
Used by producer -			
For steam raising:			
Net tons	3,199,101	1,141	3,200,242
Value	$10,550,793	$4,704	$10,555,497
To make producer or water gas:			
Net tons	116,436	....	116,436
Value	$615,816	....	$615,816
For other purposes:			
Net tons	722,308	9	722,317
Value	$2,298,843	$115	$2,298,958
Sold:			
Net tons	1,055,459	35,531	1,090,990
Value	$4,106,014	$68,452	$4,174,466
Average receipts per ton sold (Merchant sales):			
Furnace coke	$14.09	$13.29	$13.80
Foundry coke	$19.72	$15.26	$19.38
Water-gas coke	$13.51	$14.00	$13.56
Other industrial coke	$13.94	$13.54	$13.90
Domestic coke	$13.50	$11.80	$13.49
Screenings or breeze	$3.89	$1.93	$3.83
Stocks on January 1, 1950:			
Furnace coke ... net tons	838,718	51,580	890,298
Foundry coke ... do	13,120	1,118	14,238
Domestic and other coke ... do	864,720	200	864,920
Screenings or breeze ... do	1,433,289	7,327	1,440,616
Exports ... do	(1)	(1)	548,256
Imports ... do	(1)	(1)	277,507
Indicated consumption ... do	(1)	(1)	63,190,665
Coal-chemical materials produced:			
Tar ... gallons	672,407,370	....	672,407,370
Ammonium sulfate or equivalent ... pounds	1,695,611,937	....	1,695,611,937
Gas ... M cubic feet	882,309,827	....	882,309,827
Burned in coking process ... percent	36.77	....	36.77
Surplus sold or used ... do	61.90	....	61.90
Wasted ... do	1.33	....	1.33
Crude light oil ... gallons	228,754,333	....	228,754,333
Yield of coal-chemical materials per ton of coal:			
Tar ... do	7.81	....	7.81
Ammonium sulfate or equivalent ... pounds	20.08	....	20.08
Gas ... M cubic feet	10.25	....	10.25
Crude light oil ... gallons	2.77	....	2.77
Value of coal-chemical materials sold:			
Tar:			
Sold	$31,314,137	....	$31,314,137
Used by producer	$12,130,275	....	$12,130,275
Ammonia (sulfate and liquor)	$33,590,544	....	$33,590,544
Gas (surplus)	$121,378,832	....	$121,378,832
Crude light oil and derivatives	$37,862,825	....	$37,862,825
Other coal-chemical materials 2/	$14,574,393	....	$14,574,393
Total value of coke and breeze produced and coal-chemical materials sold 3/	$1,066,578,077	$44,075,063	$1,110,653,140

1/ Not separately reported. 2/ Naphthalene, tar derivatives, and miscellaneous coal-chemical materials. 3/ Includes value of tar used by producer.

TABLE 2. - Potential maximum annual coke capacity of all oven coke plants in existence in the United States, 1937 and 1945-49

Year	Plants	Ovens	Potential maximum annual coke capacity (net tons)	Percent of change from 1937
1937	87	12,718	62,727,100	....
1945	88	14,510	71,399,100	+13.8
1946	87	14,494	71,112,600	+13.4
1947	86	14,728	72,549,100	+15.7
1948	86	15,139	74,499,900	+18.8
1949	85	15,104	73,710,100	+17.5

TABLE 3. - Number and production of oven-coke plants connected with iron furnaces and of other plants in the United States, 1913, 1918, 1937, and 1947-49

Year	Number of active plants		Coke produced (net tons)		Percent of production	
	Furnace plants	Merchant plants	Furnace plants	Merchant plants	Furnace plants	Merchant plants
1913	20	16	9,277,832	3,436,868	73.0	27.0
1918	36	24	19,220,342	6,777,238	73.9	26.1
1937	43	42	36,134,209	13,076,539	73.4	26.6
1947	54	32	52,860,850	13,897,699	79.2	20.8
1948	55	31	54,951,858	13,332,499	80.5	19.5
1949	55	31	48,109,559	12,112,922	79.9	20.1

TABLE 4. - Statistical trends of the coke industry in the United States, 1937 and 1946-49

	1937	1946	1947	1948	1949
Coke production:					
Oven net tons	49,210,748	53,929,447	66,758,549	68,284,357	60,222,481
Beehive do	3,164,721	4,568,401	6,687,301	6,577,571	3,414,948
Total do	52,375,469	58,497,848	73,445,850	74,861,928	63,637,429
Percent oven	94.0	92.2	90.9	91.2	94.6
Stocks of coke, end of year net tons	2,595,287	928,766	1,032,237	1,593,441	1,769,456
Exports, all coke do	526,683	1,231,327	835,059	[1] 706,782	548,256
Imports, all coke do	286,364	52,188	104,093	161,400	277,507
Indicated consumption, all coke do	51,271,929	57,321,756	72,611,413	73,755,342	63,190,665
Disposal, all coke sold or used:					
Furnace do	36,751,969	43,700,492	57,636,505	59,285,506	51,514,853
Foundry do	2,038,822	2,996,202	3,650,001	3,750,659	2,778,868
Other industrial (including producer and water gas) do	4,597,894	6,593,870	8,028,791	7,733,382	6,412,672
Domestic do	8,107,518	5,096,733	3,977,328	3,445,309	2,755,840
Coke ovens, end of year:					
Slot-type ovens in existence	12,718	14,494	14,728	15,139	15,104
Beehive ovens in existence	12,194	12,864	13,443	14,078	13,662
Slot-type ovens under construction	259	824	572	350	562
Cost of coal charged, oven-coke plants, average per ton	$3.74	$5.77	$6.78	$8.13	$8.52
Prices of coke:					
Average spot price of Connellsville furnace, f.o.b. ovens	$4.29	$8.13	$10.49	$13.44	$13.77
Average receipts per ton sold (merchant sales), oven coke:					
Furnace*	$4.34	$8.85	$10.95	$13.78	$14.09
Foundry	$8.47	$12.62	$14.79	$18.78	$19.72
Other industrial (including water gas)	$6.08	$9.58	$11.13	$13.45	$13.74
Domestic	$6.53	$9.90	$11.19	$13.17	$13.50
Yield of coal-chemical materials per ton of coal charged:					
Tar gallons	8.67	7.82	7.78	7.60	7.81
Ammonium sulfate or equivalent pounds	21.84	19.79	19.66	19.52	20.08
Crude light oil gallons	2.86	2.77	2.75	2.73	2.77
Surplus gas sold or used M cubic feet	6.66	6.29	6.27	6.25	6.35
Average gross receipts for coal-chemical materials per ton of coke produced:					
Tar sold and used	$0.502	$0.466	$0.605	$0.828	$0.722
Ammonia and its compounds	$0.326	$0.361	$0.423	$0.545	$0.558
Crude light oil and its derivatives (including naphthalene)	$0.435	$0.467	$0.566	$0.685	$0.673
Surplus gas sold or used	$1.483	$1.542	$1.678	$1.839	$2.015
Total coal-chemical materials (including breeze)	$2.974	$3.207	$3.710	$4.419	$4.447

[1] Revised figure.

TABLE 5. - Coke produced in the United States, 1937 and 1946-49, by States, in net tons
(Exclusive of screenings or breeze)

State	1937	1946	1947	1948	1949
Oven coke:					
Alabama	4,259,771	4,665,939	5,869,738	6,015,460	5,161,397
California	....	260,470	332,244	296,749	346,552
Colorado	486,945	558,545	849,697	976,504	729,516
Illinois	2,998,663	3,192,395	3,805,374	3,675,284	3,195,645
Indiana	5,467,061	6,651,567	8,785,687	8,584,225	7,533,290
Maryland	1,513,651	1,661,606	1,975,201	2,147,787	2,039,957
Massachusetts	1,130,620	1,046,267	1,196,010	1,056,701	891,400
Michigan	2,283,518	2,499,664	2,818,941	2,849,601	2,484,409
Minnesota	704,631	860,754	897,739	846,246	781,943
New Jersey	1,015,073	1,258,854	1,432,210	1,410,941	1,345,094
New York	4,946,964	5,042,674	5,670,333	5,687,225	5,164,790
Ohio	6,737,881	8,451,580	10,069,237	10,562,486	8,911,140
Pennsylvania	13,701,262	12,794,721	16,474,893	16,649,689	14,768,809
Tennessee	89,451	229,751	241,925	251,428	213,378
Texas	....	....	263,006	644,225	497,019
Utah	149,659	487,133	975,772	1,058,501	901,829
Washington	14,656	....	....	....	....
West Virginia	1,817,993	2,162,453	2,822,381	3,298,090	3,182,857
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	1,892,949	2,105,074	2,278,161	2,273,215	2,073,456
Total	49,210,748	53,929,447	66,758,549	68,284,357	60,222,481
Beehive coke:					
Colorado	64,222	58,761	21,489	....	....
Kentucky	....	85,400	95,285	101,745	48,583
Pennsylvania	2,559,048	4,027,167	5,913,133	5,733,835	2,898,683
Tennessee	14,982	....	....	....	....
Utah	6,657	5,234	67,693	188,586	132,762
Virginia	240,425	171,242	211,876	200,911	157,812
West Virginia	279,387	220,597	377,825	352,494	177,108
Total	3,164,721	4,568,401	6,687,301	6,577,571	3,414,948
Grand total	52,375,469	58,497,848	73,445,850	74,861,928	63,637,429

TABLE 6. - Ovens completed and abandoned in the United States in 1949 and total number in existence at end of year, by States

State	Plants in existence Dec. 31	Ovens						
		In existence Dec. 31		New		Abandoned during year	Under construction Dec. 31	
		Number	Annual coke capacity (net tons)	Number	Annual coke capacity (net tons)		Number	Annual coke capacity (net tons)
Oven coke:								
Alabama	7	1,311	6,446,000	30	96,000	30	......	....
California	1	135	532,500	45	177,500	......	......	....
Colorado	1	266	1,000,000	1/4	27,700	......	......	....
Connecticut	1	70	(2)	......	....	......	......	....
Illinois	8	900	3,904,600	51	261,000	3	......	....
Indiana	5	1,871	9,341,800	77	400,000	69	142	911,000
Kentucky	1	120	(2)	......	....	......	......	....
Maryland	1	483	2,520,000	......	....	......	65	408,000
Massachusetts	1	204	1,260,000	41	248,000	52	......	....
Michigan	4	568	2,923,500	......	....	......	16	123,000
Minnesota	3	196	872,400	......	....	......	77	339,400
Missouri	1	64	(2)	......	....	......	......	....
New Jersey	2	341	1,552,000	37	137,500	......	......	....
New York	8	1,142	6,197,400	......	....	......	......	....
Ohio	15	2,248	10,934,800	123	602,300	167	105	608,000
Pennsylvania	13	3,730	18,115,500	61	325,300	183	157	885,600
Rhode Island	1	65	(2)	......	....	......	......	....
Tennessee	1	44	252,000	......	....	......	......	....
Texas	2	125	686,800	......	....	......	......	....
Utah	2	308	1,180,600	......	....	......	......	....
West Virginia	5	718	3,671,300	......	....	......	......	....
Wisconsin	2	195	(2)	......	....	......	......	....
Undistributed	....	......	2,318,900	......	....	......	......	....
Total	85	15,104	73,710,100	469	2,275,300	504	562	3,275,000
At merchant plants	30	3,057	14,209,200	129	646,500	55	......	....
At furnace plants	55	12,047	59,500,900	340	1,628,800	449	562	3,275,000
Beehive coke:								
Kentucky	1	195	172,000	......	....	......	......	....
Pennsylvania	63	10,938	7,286,800	3/201	119,200	647	......	....
Utah	2	797	315,000	......	....	......	......	....
Virginia	5	750	375,000	......	....	......	......	....
West Virginia	8	982	523,400	3/30	15,000	......	......	....
Total	79	13,662	8,672,200	3/231	134,200	647	......	....

1/ Abandoned ovens which were repaired and placed in operation. 2/ Included with "Undistributed." 3/ Old ovens rehabilitated.

TABLE 7. - Slot-type ovens, by kinds, in the United States at end of 1949, by States

State	Koppers	Koppers-Becker	Semet-Solvay	Wilputte	All others 1/	Total
Alabama	517	549	180	65	....	1,311
California	....	135	....	....	....	135
Colorado	120	146	....	....	....	266
Connecticut	....	70	....	....	....	70
Illinois	371	246	120	163	....	900
Indiana	406	743	161	561	....	1,871
Kentucky	....	....	120	....	....	120
Maryland	300	183	....	....	....	483
Massachusetts	....	149	....	55	....	204
Michigan	....	222	346	....	....	568
Minnesota	155	41	....	....	....	196
Missouri	56	....	....	....	8	64
New Jersey	165	176	....	....	....	341
New York	150	608	180	152	52	1,142
Ohio	1,241	392	293	322	....	2,248
Pennsylvania	1,550	1,766	88	206	120	3,730
Rhode Island	40	25	....	....	....	65
Tennessee	....	....	24	20	....	44
Texas	....	125	....	....	....	125
Utah	....	308	....	....	....	308
West Virginia	154	419	....	145	....	718
Wisconsin	100	15	80	....	....	195
Total	5,325	6,318	1,592	1,689	180	15,104
At merchant plants	677	1,187	722	411	60	3,057
At furnace plants	4,648	5,131	870	1,278	120	12,047

1/ Comprises 52 American Foundation, 120 Cambria, and 8 Piette.

TABLE 8. - Age of slot-type ovens in the United States on December 31, 1949, by merchant and furnace plants 1/

Age	Merchant plants		Furnace plants		Total			
	Number of ovens	Annual coke capacity (net tons)	Number of ovens	Annual coke capacity (net tons)	Number of ovens	Percent of total	Annual coke capacity (net tons)	Percent of total
Under 5 years	266	1,290,500	1,519	8,578,800	1,785	11.8	9,869,300	13.4
From 5 to 10 years	416	2,189,400	2,561	13,792,500	2,977	19.7	15,981,900	21.7
From 10 to 15 years	120	460,000	1,383	7,228,600	1,503	10.0	7,688,600	10.4
From 15 to 20 years	130	675,800	260	1,330,400	390	2.6	2,006,200	2.7
From 20 to 25 years	903	4,712,800	1,218	6,732,300	2,121	14.0	11,445,100	15.5
25 years and over	1,222	4,880,700	5,106	21,838,300	6,328	41.9	26,719,000	36.3
Total	3,057	14,209,200	12,047	59,500,900	15,104	100.0	73,710,100	100.0

1/ Determined by first year of operation or after rebuilding or major repairs.

TABLE 9. - Coke produced, value, number of ovens, coal charged, and average yield in the United States in 1949, by States
(Exclusive of screenings or breeze)

State	Oven coke						
	Plants	Ovens	Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke at ovens	
						Total	Per ton
Alabama	7	1,311	7,282,457	70.87	5,161,397	$55,493,394	$10.75
California	1	135	578,484	59.91	346,552	(1)	(1)
Colorado	1	266	1,095,247	66.61	729,516	(1)	(1)
Illinois	8	900	4,590,854	69.61	3,195,645	52,258,356	16.35
Indiana	5	1,871	10,437,884	72.17	7,533,290	122,527,774	16.26
Maryland	1	483	2,839,947	71.83	2,039,957	(1)	(1)
Massachusetts	1	204	1,264,638	70.49	891,400	(1)	(1)
Michigan	4	568	3,480,364	71.38	2,484,409	34,773,316	14.00
Minnesota	3	196	1,098,718	71.17	781,943	12,693,926	16.23
New Jersey	2	341	1,838,202	73.17	1,345,094	(1)	(1)
New York	8	1,142	7,389,691	69.89	5,164,790	69,074,052	13.37
Ohio	15	2,248	12,688,184	70.23	8,911,140	111,443,394	12.51
Pennsylvania	13	3,730	21,647,307	68.22	14,768,809	179,838,346	12.18
Tennessee	1	44	304,913	69.98	213,378	(1)	(1)
Texas	2	125	709,108	70.09	497,019	(1)	(1)
Utah	2	308	1,466,527	61.49	901,829	(1)	(1)
West Virginia	5	718	4,519,527	70.42	3,182,857	34,370,765	10.80
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	6	514	2,822,349	73.47	2,073,456	29,838,358	14.39
Undistributed	....	.....	....	......	....	96,480,388	13.85
Total 1949	85	15,104	86,054,401	69.98	60,222,481	798,792,069	13.26
At merchant plants	30	3,057	16,960,295	71.42	12,112,922	181,084,964	14.95
At furnace plants	55	12,047	69,094,106	69.63	48,109,559	617,707,105	12.84
Total 1948	86	15,139	97,240,318	70.22	68,284,357	848,719,083	12.43

State	Beehive coke						Total	
	Ovens	Coal charged (net tons)	Yield of coke from coal (percent)	Coke produced (net tons)	Value of coke at ovens		Coke produced (net tons)	Value of coke at ovens
					Total	Per ton		
Alabama	......	....	......	....	....	.....	5,161,397	$55,493,394
California	......	....	......	....	....	.....	346,552	(1)
Colorado	......	....	......	....	....	.....	729,516	(1)
Illinois	......	....	......	....	....	.....	3,195,645	52,258,356
Indiana	......	....	......	....	....	.....	7,533,290	122,527,774
Maryland	......	....	......	....	....	.....	2,039,957	(1)
Massachusetts	......	....	......	....	....	.....	891,400	(1)
Michigan	......	....	......	....	....	.....	2,484,409	34,773,316
Minnesota	......	....	......	....	....	.....	781,943	12,693,926
New Jersey	......	....	......	....	....	.....	1,345,094	(1)
New York	......	....	......	....	....	.....	5,164,790	69,074,052
Ohio	......	....	......	....	....	.....	8,911,140	111,443,394
Pennsylvania	10,938	4,491,782	64.53	2,898,683	$36,367,550	$12.55	17,667,492	216,205,896
Tennessee	......	....	......	....	....	.....	213,378	(1)
Texas	......	....	......	....	....	.....	497,019	(1)
Utah	797	244,801	54.23	132,762	(1)	(1)	1,034,591	(1)
Virginia	750	263,983	59.78	157,812	2,300,193	14.58	157,812	2,300,193
West Virginia	982	276,686	64.01	177,108	2,535,415	14.32	3,359,965	36,906,180
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	195	77,243	62.90	48,583	(1)	(1)	2,122,039	(1)
Undistributed	......	....	......	....	2,742,469	15.12	....	129,061,215
Total: 1949	13,662	5,354,495	63.78	3,414,948	43,945,627	12.87	63,637,429	842,737,696
1948	14,078	10,321,568	63.73	6,577,571	79,562,771	12.10	74,861,928	928,281,854

1/ Included with "Undistributed."

TABLE 10. - Relationship of production to potential maximum capacity 1/ at oven-coke plants in the United States, 1937 and 1946-49, by months, in percent

Month	1937	1946	1947	1948	1949	Month	1937	1946	1947	1948	1949
January	83.0	61.8	91.0	94.8	95.2	August	86.0	88.4	90.5	93.1	80.3
February	83.5	47.4	92.0	94.7	95.0	September ...	86.1	89.4	89.3	94.9	79.8
March	84.9	81.3	91.7	90.9	93.3	October	76.0	89.2	91.3	93.9	26.9
April	84.9	64.6	90.1	74.6	93.3	November	62.8	82.4	91.9	94.0	55.8
May	84.6	41.7	89.6	92.0	90.8	December	53.1	77.2	92.6	95.0	86.2
June	78.6	73.9	89.1	93.3	84.9	Year	78.8	73.8	90.5	92.0	79.7
July	83.2	86.2	86.9	92.2	77.0						

1/ Capacity of all ovens in existence, whether active or idle, based upon maximum daily capacity times days in month.

TABLE 11. - Coal consumed in coke ovens in the United States, 1937 and 1948-49, by months, in net tons

Month	1937			1948			1949		
	Coke oven	Beehive	Total	Coke oven 1/	Beehive	Total	Coke oven 2/	Beehive	Total
January	6,198,700	426,600	6,625,300	8,393,300	999,600	9,392,900	8,658,200	1,033,400	9,691,600
February	5,679,900	458,500	6,138,400	7,908,500	880,600	8,789,100	7,839,600	997,100	8,836,700
March	6,387,000	556,800	6,943,800	8,092,600	522,300	8,614,900	8,518,600	707,300	9,225,900
April	6,183,800	480,800	6,664,600	6,482,300	407,000	6,889,300	8,261,100	997,900	9,259,000
May	6,368,500	509,700	6,878,200	8,175,500	933,400	9,108,900	8,303,900	826,400	9,130,300
June	5,729,200	430,500	6,159,700	8,032,700	874,500	8,907,200	7,524,900	403,300	7,933,200
July	6,217,200	441,700	6,658,900	8,215,000	721,400	8,936,400	7,029,700	40,900	7,070,600
August	6,425,800	401,100	6,826,900	8,345,900	994,900	9,340,800	7,379,200	78,400	7,457,600
September	6,220,700	392,800	6,613,500	8,193,200	956,300	9,149,500	7,054,100	48,400	7,102,500
October	5,664,800	351,600	6,016,400	8,495,700	1,009,600	9,505,300	2,474,000	15,300	2,489,300
November	4,527,000	264,000	4,791,000	8,263,700	986,900	9,250,600	5,052,400	61,200	5,113,600
December	3,972,800	212,700	4,185,500	8,641,900	1,035,100	9,677,000	7,958,700	139,900	8,098,600
Total	69,575,400	4,926,800	74,502,200	97,240,300	10,321,600	107,561,900	86,054,400	5,354,500	91,408,900

1/ Includes 256,200 tons of anthracite fines. 2/ Includes 172,800 tons of anthracite fines.

TABLE 12. - Quantity and value at ovens of coal used in manufacturing coke in the United States in 1949, by States

State	Coal used (net tons)	Cost of coal		Coal per ton of coke	
		Total	Average per ton	Net tons	Cost
Oven coke:					
Alabama	7,282,457	$49,610,462	$6.81	1.41	$9.61
California	578,484	(1)	(1)	1.67	(1)
Colorado	1,095,247	(1)	(1)	1.50	(1)
Illinois	4,590,854	44,743,167	9.75	1.44	14.00
Indiana	10,437,884	101,352,413	9.71	1.39	13.45
Maryland	2,839,947	(1)	(1)	1.39	(1)
Massachusetts	1,264,638	(1)	(1)	1.42	(1)
Michigan	3,480,364	31,300,860	8.99	1.40	12.60
Minnesota	1,098,718	11,096,368	10.10	1.41	14.19
New Jersey	1,838,202	(1)	(1)	1.37	(1)
New York	7,389,691	72,619,888	9.83	1.43	14.06
Ohio	12,688,184	106,811,764	8.42	1.42	11.99
Pennsylvania	21,647,307	165,353,676	7.64	1.47	11.20
Tennessee	304,913	(1)	(1)	1.43	(1)
Texas	709,108	(1)	(1)	1.43	(1)
Utah	1,466,527	(1)	(1)	1.63	(1)
West Virginia	4,519,527	28,788,809	6.37	1.42	9.04
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	2,822,349	26,839,309	9.51	1.36	12.94
Undistributed	....	94,829,892	9.39	1.45	13.62
Total	86,054,401	733,346,608	8.52	1.43	12.18
At merchant plants	16,960,295	158,301,188	9.33	1.40	13.07
At furnace plants	69,094,106	575,045,420	8.32	1.44	11.95
Beehive coke:					
Kentucky	77,243	(1)	(1)	1.59	(1)
Pennsylvania	4,491,782	24,358,310	5.42	1.55	8.40
Utah	244,801	(1)	(1)	1.84	(1)
Virginia	263,983	1,427,389	5.41	1.67	9.04
West Virginia	276,686	1,480,356	5.35	1.56	8.36
Undistributed	....	1,777,841	5.52	1.78	9.80
Total	5,354,495	29,043,896	5.42	1.57	8.50

1/ Included with "Undistributed."

TABLE 13. - Average cost per net ton of coal carbonized at oven-coke plants in the United States, 1937 and 1944-49, by States

State	1937	1944	1945	1946	1947	1948	1949
Alabama	$2.33	$4.03	$4.47	$4.96	$5.57	$6.48	$6.81
Illinois	4.62	6.04	6.16	6.70	8.00	9.38	9.75
Indiana	4.71	6.11	6.23	6.75	8.01	9.35	9.71
Michigan	4.16	5.39	5.55	5.97	6.79	8.26	8.99
Minnesota	5.24	6.35	6.52	6.86	8.33	9.90	10.10
New York	4.55	5.88	6.04	6.71	7.76	9.48	9.83
Ohio	3.76	5.03	5.27	5.72	6.76	8.11	8.42
Pennsylvania	2.98	4.28	4.40	4.79	5.87	7.22	7.64
West Virginia	2.54	3.32	3.56	3.84	4.72	6.14	6.37
Other States 1/	4.53	5.72	5.94	6.51	7.46	8.88	9.42
United States average	3.74	5.08	5.28	5.77	6.78	8.13	8.52
Cost of coal per ton of coke	5.27	7.16	7.45	8.17	9.60	11.58	12.18

1/ California, Colorado, Connecticut, Kentucky, Maryland, Massachusetts, Missouri, New Jersey, Rhode Island, Tennessee, Texas, Utah, and Wisconsin.

TABLE 14. - Cost of coal and value of products per net ton of coke produced in the United States, 1918, 1929, 1937, and 1945-49

Year	Oven coke				Beehive coke	
	Cost of coal per ton of coke	Value per ton of coke produced			Cost of coal per ton of coke	Value per ton
		Coke	Coal-chemical materials 1/	Total		
1918	$6.00	$7.42	$3.08	$10.50	$3.65	$6.21
1929	5.04	4.80	3.56	8.36	2.85	3.49
1937	5.27	5.03	2.97	8.00	3.14	4.31
1945	7.45	7.57	3.07	10.64	5.48	7.36
1946	8.17	8.35	3.20	11.55	5.63	8.03
1947	9.60	10.65	3.71	14.36	6.94	9.77
1948	11.58	12.43	4.42	16.85	8.02	12.10
1949	12.18	13.26	4.45	17.71	8.50	12.87

TABLE 15. - Washed and unwashed coal used in manufacturing coke in the United States in 1949, by States in which used, in net tons

State	Slot-type ovens				Beehive ovens		
	Bituminous		Anthracite	Total	Bituminous		
	Washed	Unwashed			Washed	Unwashed	Total
Alabama	7,066,112	216,345	....	7,282,457	....	....	....
California	513,955	64,529	....	578,484	....	....	....
Colorado	1,095,247	....	....	1,095,247	....	....	....
Illinois	1,875,690	2,701,004	14,160	4,590,854	....	....	....
Indiana	3,049,379	7,388,505	....	10,437,884	....	....	....
Maryland	....	2,839,947	....	2,839,947	....	....	....
Massachusetts	....	1,264,638	....	1,264,638	....	....	....
Michigan	252,462	3,150,119	77,783	3,480,364	....	....	....
Minnesota	107,264	984,447	7,007	1,098,718	....	....	....
New Jersey	....	1,838,202	....	1,838,202	....	....	....
New York	917,223	6,465,397	7,071	7,389,691	....	....	....
Ohio	5,664,474	7,023,710	....	12,688,184	....	....	....
Pennsylvania	9,433,822	12,177,922	35,563	21,647,307	846,818	3,644,964	4,491,782
Tennessee	148,569	156,344	....	304,913	....	....	....
Texas	516,660	192,448	....	709,108	....	....	....
Utah	....	1,466,527	....	1,466,527	218,212	26,589	244,801
Virginia	....	....	....	....	....	263,983	263,983
West Virginia	1,235,421	3,270,324	13,782	4,519,527	....	276,686	276,686
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	771,046	2,033,844	17,459	2,822,349	....	77,243	77,243
Total	32,647,324	53,234,252	172,825	86,054,401	1,065,030	4,289,465	5,354,495
At merchant plants	2,342,147	14,573,005	45,143	16,960,295	....	....	....
At furnace plants	30,305,177	38,661,247	127,682	69,094,106	....	....	....

TABLE 16. - Coal received for manufacturing oven coke in the United States in 1949, by States where produced and where consumed and by merchant and furnace plants, in net tons

State where coal was consumed	Coal produced in -														
	Alabama	Arkansas	Colorado	Illinois	Indiana	Kentucky	Maryland	New Mexico	Oklahoma	Pennsylvania	Tennessee	Utah	Virginia	West Virginia	Total
Alabama:															
Merchant plants	844,908	4,163	......	......	......	......	......	......	......	......	......	......	3,820	117,634	970,525
Furnace plants	6,119,013	2,861	......	......	......	......	......	......	2,862	......	......	......	......	10,689	6,135,425
Total Alabama	6,963,921	7,024	......	......	......	......	......	......	2,862	......	......	......	3,820	128,323	7,105,950
California:															
Furnace plant	......	64,661	......	......	......	......	......	27,551	......	......	......	508,418	......	......	600,630
Colorado:															
Furnace plant	......	47,849	805,087	......	......	......	......	326,524	79,724	......	......	......	......	......	1,259,184
Illinois:															
Merchant plants	......	......	......	......	......	63,148	......	......	......	28,179	1,149	......	1,329	498,473	592,278
Furnace plants	......	4,833	......	274,033	78,283	1,720,992	......	......	1,451	1,473	......	......	71,079	1,674,107	3,826,251
Total Illinois	......	4,833	......	274,033	78,283	1,784,140	......	......	1,451	29,652	1,149	......	72,408	2,172,580	4,418,529
Indiana:															
Merchant plants	......	......	......	......	12,148	......	......	......	......	......	......	......	58,165	932,856	1,003,169
Furnace plants	......	......	......	256,661	......	4,238,577	......	......	......	1,872	......	......	959,028	3,974,459	9,430,597
Total Indiana	......	......	......	256,661	12,148	4,238,577	......	......	......	1,872	......	......	1,017,193	4,907,315	10,433,766
Maryland:															
Furnace plant	......	......	......	......	......	......	......	......	......	447,164	......	......	16,130	2,467,954	2,931,248
Massachusetts:															
Merchant plants	......	......	......	......	......	84,440	......	......	......	......	......	......	54,953	1,119,513	1,258,915
Michigan:															
Merchant plants	......	......	......	......	......	......	......	......	......	228,594	......	......	152,134	479,741	860,469
Furnace plants	......	......	......	......	......	1,117,839	......	......	......	314,767	......	......	197,796	857,627	2,488,029
Total Michigan	......	......	......	......	......	1,117,839	......	......	......	543,361	......	......	349,930	1,337,368	3,348,498
Minnesota:															
Merchant plant	......	......	......	189	......	......	......	......	......	7,041	......	......	......	279,383	286,613
Furnace plants	......	......	......	......	......	424,170	......	......	......	11,721	......	......	......	285,569	721,460
Total Minnesota	......	......	......	189	......	424,170	......	......	......	18,762	......	......	......	564,952	1,008,073
New Jersey:															
Merchant plants	......	......	......	......	......	164,131	......	......	......	......	......	......	179,409	1,378,711	1,722,251
New York:															
Merchant plants	......	......	......	......	......	369,629	......	......	......	1,313,833	......	......	188,074	1,668,269	3,539,805
Furnace plants	......	......	......	......	......	327,315	......	......	......	1,924,928	5,651	......	174,525	901,901	3,334,320
Total New York	......	......	......	......	......	696,944	......	......	......	3,238,761	5,651	......	362,599	2,570,170	6,874,125
Ohio:															
Merchant plants	......	......	......	......	......	224,237	......	......	......	......	......	......	213,841	1,180,296	1,618,374
Furnace plants	......	......	......	......	......	2,018,489	......	......	......	4,152,054	......	......	69,963	4,773,193	11,013,699
Total Ohio	......	......	......	......	......	2,242,726	......	......	......	4,152,054	......	......	283,804	5,953,489	12,632,073
Pennsylvania:															
Merchant plants	......	......	......	......	......	......	......	......	......	12,328	......	......	88,562	658,632	759,522
Furnace plants	......	......	......	......	......	388,606	652	......	......	16,431,184	......	......	......	4,974,412	21,794,854
Total Pennsylvania	......	......	......	......	......	388,606	652	......	......	16,443,512	......	......	88,562	5,633,044	22,554,376
Tennessee:															
Furnace plant	......	......	......	......	......	90,314	......	......	......	......	148,569	......	......	18,795	257,678
Texas:															
Furnace plants	101,992	9,260	......	......	......	......	......	......	600,259	......	......	......	......	......	711,511
Utah:															
Furnace plants	......	......	......	......	......	......	......	......	157,660	......	......	1,308,867	......	......	1,466,527
West Virginia:															
Merchant plants	......	......	......	......	......	......	......	......	......	......	......	......	......	978,460	978,460
Furnace plants	......	......	......	......	......	40,174	......	......	......	2,471,127	......	......	2,694	950,608	3,464,603
Total West Virginia	......	......	......	......	......	40,174	......	......	......	2,471,127	......	......	2,694	1,929,068	4,443,063
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin:															
Merchant plants	......	8,303	......	11,609	8,961	43,945	......	......	......	25,673	......	......	97,345	2,457,491	2,653,327
Grand total	7,065,913	141,930	805,087	542,492	99,392	11,316,015	652	354,075	841,956	27,371,938	155,369	1,817,285	2,528,847	32,638,773	85,679,724
At merchant plants	844,908	12,466	......	11,798	21,109	949,539	......	......	......	1,615,648	1,149	......	1,037,632	11,749,459	16,243,708
At furnace plants	6,221,005	129,464	805,087	530,694	78,283	10,366,476	652	354,075	841,956	25,756,290	154,220	1,817,285	1,491,215	20,889,314	69,436,016

TABLE 17. - Coal received for manufacturing oven coke in the United States in 1949, by States where consumed and by volatile content 1/

State where coal was consumed	High-volatile		Medium-volatile		Low-volatile		Total coal received (net tons)
	Net tons	Percent of total	Net tons	Percent of total	Net tons	Percent of total	
Alabama:							
Merchant plants	102,228	10.5	746,500	76.9	121,797	12.6	970,525
Furnace plants	405,512	6.6	5,719,224	93.2	10,689	0.2	6,135,425
Total Alabama	507,740	7.1	6,465,724	91.0	132,486	1.9	7,105,950
California:							
Furnace plant	535,969	89.2	....	.....	64,661	10.8	600,630
Colorado:							
Furnace plant	1,131,611	89.9	....	.....	127,573	10.1	1,259,184
Illinois:							
Merchant plants	103,093	17.4	245,806	41.5	243,379	41.1	592,278
Furnace plants	2,694,571	70.4	....	.....	1,131,680	29.6	3,826,251
Total Illinois	2,797,664	63.2	245,806	5.7	1,375,059	31.1	4,418,529
Indiana:							
Merchant plants	527,812	52.6	86,813	8.7	388,544	38.7	1,003,169
Furnace plants	5,071,690	53.8	....	.....	4,358,907	46.2	9,430,597
Total Indiana	5,599,502	53.7	86,813	0.8	4,747,451	45.5	10,433,766
Maryland:							
Furnace plant	1,956,690	66.8	....	.....	974,558	33.2	2,931,248
Massachusetts:							
Merchant plants	773,894	61.5	244,763	19.4	240,258	19.1	1,258,915
Michigan:							
Merchant plants	228,594	26.6	274,428	31.9	357,447	41.5	860,469
Furnace plants	1,943,486	78.1	....	.....	544,543	21.9	2,488,029
Total Michigan	2,172,080	64.9	274,428	8.2	901,990	26.9	3,348,498
Minnesota:							
Merchant plant	188,130	65.6	....	.....	98,483	34.4	286,613
Furnace plants	435,891	60.4	14,479	2.0	271,090	37.6	721,460
Total Minnesota	624,021	61.9	14,479	1.4	369,573	36.7	1,008,073
New Jersey:							
Merchant plants	898,136	52.1	464,994	27.0	359,121	20.9	1,722,251
New York:							
Merchant plants	2,457,813	69.4	612,736	17.3	469,256	13.3	3,539,805
Furnace plants	1,748,713	52.5	407,646	12.2	1,177,961	35.3	3,334,320
Total New York	4,206,526	61.2	1,020,382	14.8	1,647,217	24.0	6,874,125
Ohio:							
Merchant plants	966,887	59.7	139,978	8.7	511,509	31.6	1,618,374
Furnace plants	7,228,759	65.6	307,237	2.8	3,477,703	31.6	11,013,699
Total Ohio	8,195,646	64.9	447,215	3.5	3,989,212	31.6	12,632,073
Pennsylvania:							
Merchant plants	316,777	41.7	319,957	42.1	122,788	16.2	759,522
Furnace plants	18,425,515	84.5	564,141	2.6	2,805,198	12.9	21,794,854
Total Pennsylvania	18,742,292	83.1	884,098	3.9	2,927,986	13.0	22,554,376
Tennessee:							
Furnace plant	90,314	35.0	148,569	57.7	18,795	7.3	257,678
Texas:							
Furnace plants	429,036	60.3	198,931	28.0	83,544	11.7	711,511
Utah:							
Furnace plants	1,308,867	89.2	....	.....	157,660	10.8	1,466,527
West Virginia:							
Merchant plants	978,460	100.0	....	.....	....	.....	978,460
Furnace plants	2,923,987	84.4	21,215	0.6	519,401	15.0	3,464,603
Total West Virginia	3,902,447	87.8	21,215	0.5	519,401	11.7	4,443,063
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin:							
Merchant plants	1,785,590	67.3	154,109	5.8	713,628	26.9	2,653,327
Grand total	55,658,025	65.0	10,671,526	12.4	19,350,173	22.6	85,679,724
At merchant plants	9,327,414	57.4	3,290,084	20.3	3,626,210	22.3	16,243,708
At furnace plants	46,330,611	66.7	7,381,442	10.6	15,723,963	22.7	69,436,016

1/ High-volatile - dry volatile matter more than 31 percent; medium-volatile - dry volatile matter 31 percent or less and more than 22 percent; low-volatile - dry volatile matter 22 percent or less and more than 14 percent.

TABLE 18. - Oven and beehive coke and breeze distributed to each State in 1949, in net tons
(Based upon reports from all United States producers showing destination of coke used by producer or sold in 1949. Does not include imported coke which totaled 277,507 tons in 1949)

Consuming State	Coke							Coke breeze
	Furnace use	Foundry use	Making producer gas	Making water gas	Other industrial use	Domestic use	Total	
Alabama	4,309,125	186,594	....	....	147,970	37,003	4,680,692	193,547
Arizona	....	5,407	....	....	568	....	5,975	....
Arkansas	....	2,201	....	....	1,188	....	3,389	95
California	387,911	55,049	....	....	38,610	....	481,570	35,565
Colorado	698,195	12,692	....	....	19,004	428	730,319	71,339
Connecticut	....	42,056	74,318	118,904	11,370	102,529	349,177	39,846
Delaware	....	2,211	....	96	213	481	3,001	5,275
District of Columbia	....	129	....	....	30	....	159	....
Florida	....	1,506	....	35,009	1,692	1,277	39,484	13,439
Georgia	....	13,635	....	6,519	5,783	14,384	40,321	....
Idaho	....	369	....	....	2,875	48	3,292	8,721
Illinois	4,365,368	243,649	....	2,492	128,225	184,843	4,924,577	281,209
Indiana	5,575,986	144,554	15,106	40,673	118,853	138,823	6,033,995	550,976
Iowa	....	77,709	....	....	29,562	3,308	110,579	10,851
Kansas	....	11,680	....	....	2,492	....	14,172	....
Kentucky	501,400	31,281	....	91,228	33,364	30,002	687,275	76,956
Louisiana	....	4,778	....	1,695	45,686	1,486	53,645	542
Maine	....	5,297	....	11,260	420	16,222	33,199	....
Maryland	2,536,610	33,377	....	8,006	39,744	1,353	2,619,090	229,805
Massachusetts	147,420	55,116	116,816	204,819	12,017	384,543	920,731	89,014
Michigan	1,359,709	498,115	....	....	238,463	253,074	2,349,361	222,752
Minnesota	465,338	33,781	....	8,834	23,986	99,987	631,926	83,769
Mississippi	....	771	....	....	222	349	1,342	56
Missouri	....	61,869	....	5,447	31,911	13,997	113,224	5,483
Montana	....	1,984	....	....	11,727	....	13,711	28,611
Nebraska	....	3,441	....	....	2,414	266	6,121	5,282
Nevada	....	26	....	....	3,889	....	3,915	....
New Hampshire	....	3,917	....	1,294	402	19,902	25,515	....
New Jersey	....	88,238	112,661	357,955	92,874	280,906	932,634	107,279
New Mexico	....	438	....	....	898	....	1,336	....
New York	3,075,640	113,751	293,142	984,862	344,450	509,911	5,321,756	475,198
North Carolina	....	12,879	....	1,859	3,275	4,558	22,571	168
North Dakota	....	324	....	....	193	352	869	....
Ohio	9,428,975	304,792	....	299,513	164,743	131,625	10,329,648	735,801
Oklahoma	....	4,145	....	....	162	....	4,307	40,887
Oregon	....	4,262	....	....	6,820	....	11,082	2,271
Pennsylvania	15,307,215	254,399	87,196	118,785	191,684	167,767	16,127,046	1,252,139
Rhode Island	....	11,671	37,067	16,410	1,062	59,756	125,966	21,712
South Carolina	....	4,496	....	1,493	5,159	2,434	13,582	2,546
South Dakota	....	363	....	....	....	556	919	....
Tennessee	107,423	58,043	....	42	103,540	6,516	275,564	110,540
Texas	441,585	31,410	....	136	13,361	912	487,404	34,915
Utah	885,911	11,208	....	....	48,363	4,920	950,402	84,991
Vermont	....	2,706	....	2,455	971	8,896	15,028	....
Virginia	127,900	41,863	....	317,293	67,335	1,461	555,852	91
Washington	....	7,246	....	....	5,538	....	12,784	9,095
West Virginia	1,694,204	24,128	....	740,536	50,199	101	2,509,168	193,323
Wisconsin	....	143,664	54,604	29,456	22,227	180,844	430,795	63,759
Wyoming	....	86	....	....	1,212	....	1,298	....
Total	51,415,915	2,653,306	790,910	3,407,071	2,076,746	2,665,820	63,009,768	5,087,848
Exported	98,938	125,562	....	10,648	127,297	90,020	452,465	42,137
Grand total	51,514,853	2,778,868	790,910	3,417,719	2,204,043	2,755,840	63,462,233	5,129,985

TABLE 19. - Coke consumed in manufacture of pig iron and for other purposes in the United States, 1913, 1918, 1937, and 1947-49, in net tons

Year	Total production	Imports	Exports	Net change in stocks	Indicated United States consumption 1/	Consumed by iron furnaces 2/		Remainder consumed in other ways	
						Quantity	Percent	Quantity	Percent
1913	46,299,530	101,212	987,395	(3)	45,413,347	37,192,287	81.9	8,221,060	18.1
1918	56,478,372	30,168	1,687,824	(3)	54,820,716	45,703,594	83.4	9,117,122	16.6
1937	52,375,469	286,364	526,683	+863,221	51,271,929	37,599,911	73.3	13,672,018	26.7
1947	73,445,850	104,093	835,059	+103,471	72,611,413	57,147,644	78.7	15,463,769	21.3
1948	74,861,928	161,400	4/706,782	+561,204	73,755,342	59,128,129	80.2	14,627,213	19.8
1949	63,637,429	277,507	548,256	+176,015	63,190,665	51,356,617	81.3	11,834,048	18.7

1/ Production plus imports minus exports, plus or minus net changes in stocks. 2/ American Iron and Steel Institute; figures include coke consumed in manufacture of ferro-alloys. 3/ Data not available. 4/ Revised figure.

TABLE 20. - Coke and coking coal consumed per net ton of pig iron made in the United States, 1913, 1918, 1937, and 1947-49

Year	Coke per net ton of pig iron and ferro-alloys 1/ (pounds)	Yield of coke from coal (percent)	Coking coal per net ton of pig iron and ferro-alloys (pounds calculated)	Year	Coke per net ton of pig iron and ferro-alloys 1/ (pounds)	Yield of coke from coal (percent)	Coking coal per net ton of pig iron and ferro-alloys (pounds calculated)
1913	2,172.6	66.9	3,247.5	1947	1,926.0	69.9	2,755.4
1918	2,120.7	66.4	3,193.8	1948	1,937.2	69.6	2,783.3
1937	1,830.6	70.3	2,604.0	1949	1,895.8	70.0	2,708.3

1/ American Iron and Steel Institute; consumption per ton of pig iron only, excluding furnaces making ferro-alloys was 2,172.6 pounds in 1913, 2,120.7 in 1918, 1,806.7 in 1937, 1,900.0 in 1947, 1,908.0 in 1948, and 1,870.4 in 1949.

TABLE 21. - Oven coke produced and sold or used by producer in the United States in 1949, by States
(Exclusive of screenings or breeze)

State	Produced		Used by producer -				Sold	
			In blast furnaces		For other purposes 1/		Furnace use 2/	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Alabama	5,161,397	$55,493,394	4,232,386	$41,241,209	18,596	$184,262	79,635	$1,011,548
California	346,552	(3)	352,759	(3)	292	(3)	....	....
Colorado	729,516	(3)	683,418	(3)	2,641	(3)	....	....
Illinois	3,195,645	52,258,356	1,595,608	24,866,933	6,381	87,195	1,185,752	20,344,401
Indiana	7,533,290	122,527,774	5,480,521	86,889,062	100,140	1,402,601	1,402,361	24,490,100
Maryland	2,039,957	(3)	2,049,692	(3)	4,739	(3)	....	....
Massachusetts	891,400	(3)	....	....	134,359	(3)	147,362	(3)
Michigan	2,484,409	34,773,316	1,320,388	(3)	146,314	2,116,448	156,534	(3)
Minnesota	781,943	12,693,926	432,896	(3)	14,519	180,977	31,570	(3)
New Jersey	1,345,094	(3)	....	....	232,318	(3)	194,904	(3)
New York	5,164,790	69,074,052	1,669,058	(3)	1,130,830	14,309,937	1,425,594	17,890,311
Ohio	8,911,140	111,443,394	6,744,098	82,380,242	71,755	971,318	1,056,436	13,333,875
Pennsylvania	14,768,809	179,838,346	7,711,693	92,045,360	144,792	1,692,504	6,272,123	76,069,401
Tennessee	213,378	(3)	107,423	(3)	14,944	(3)	....	....
Texas	497,019	(3)	404,453	(3)	38	(3)	66,424	(3)
Utah	901,829	(3)	820,581	(3)	3,081	(3)	....	....
West Virginia	3,182,857	34,370,765	1,441,389	19,207,454	334,851	2,679,047	939,767	7,998,718
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	2,073,456	29,838,358	....	....	180,798	2,059,993	648,966	7,426,924
Undistributed	....	96,480,388	....	105,350,770	....	5,127,017	....	8,681,538
Total 1949	60,222,481	798,792,069	35,046,393	451,981,030	2,541,388	30,811,299	13,607,428	177,246,816
At merchant plants	12,112,922	181,084,964	....	....	2,188,504	26,881,443	2,217,394	32,439,133
At furnace plants	48,109,559	617,707,105	35,046,393	451,981,030	352,884	3,929,856	11,390,034	144,807,683
Total 1948	68,284,357	848,719,083	38,995,137	466,383,833	2,817,193	30,999,229	14,958,206	181,311,835

State	Sold - continued							
	Foundry 4/		Other industrial including water gas 5/		Domestic		Total	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Alabama	411,156	$7,269,798	283,184	$4,424,070	94,306	$965,475	868,281	$13,670,891
California	....	....	1,899	(3)	....	....	1,899	(3)
Colorado	3,832	(3)	41,806	(3)	428	(3)	46,066	(3)
Illinois	243,080	4,976,474	80,607	1,019,535	104,612	1,325,950	1,614,051	27,666,360
Indiana	393,448	(3)	75,725	(3)	149,634	1,640,955	2,021,168	35,233,667
Maryland	....	....	....	....	....	....	....	....
Massachusetts	63,840	(3)	182,951	(3)	336,609	(3)	730,762	(3)
Michigan	371,826	(3)	190,317	2,204,060	278,235	3,551,210	996,912	15,168,089
Minnesota	100,457	(3)	24,476	(3)	83,474	(3)	239,977	(3)
New Jersey	48,031	(3)	504,794	(3)	320,377	(3)	1,068,106	(3)
New York	28,190	(3)	379,339	(3)	521,518	7,115,342	2,354,641	30,936,885
Ohio	229,116	4,190,291	741,275	9,755,690	143,847	1,676,111	2,170,674	28,955,967
Pennsylvania	202,945	4,130,128	225,136	3,233,458	193,979	2,263,984	6,894,183	85,696,971
Tennessee	25,913	(3)	64,548	(3)	....	....	90,461	(3)
Texas	12,718	(3)	19,229	(3)	....	....	98,371	(3)
Utah	....	....	70,583	(3)	4,968	(3)	75,551	(3)
West Virginia	10,697	189,324	382,964	3,763,423	62,692	451,531	1,396,120	12,402,996
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	353,344	7,163,106	365,632	5,417,539	446,308	6,552,221	1,814,250	26,559,790
Undistributed	....	21,480,945	....	20,017,635	....	11,471,993	....	37,205,448
Total 1949	2,498,593	49,400,066	3,634,465	49,835,410	2,740,987	37,014,772	22,481,473	313,497,064
At merchant plants	2,134,965	42,449,274	3,090,606	43,474,516	2,234,922	31,905,157	9,677,887	150,268,080
At furnace plants	363,628	6,950,792	543,859	6,360,894	506,065	5,109,615	12,803,586	163,228,984
Total 1948	3,162,237	59,612,136	4,326,178	57,781,721	3,398,696	44,759,620	25,845,317	343,465,312

1/ Comprises 80,395 tons valued at $1,230,026 used in foundries; 790,910 tons, $9,538,902 to make producer gas; 1,313,785 tons, $16,167,896 to make water gas; and 356,298 tons, $3,874,475 for other purposes. 2/ Includes 10,656,809 tons valued at $135,672,369 sold to financially affiliated companies. 3/ Included with "Undistributed." 4/ Includes 52,433 tons valued at $1,158,472 sold to financially affiliated companies. 5/ Includes 721,076 tons valued at $9,867,867 for manufacture of water gas and 192,713 tons, $2,573,912 for other industrial use sold to financially affiliated companies; and 1,267,885 tons, $17,135,440 for manufacture of water gas sold to other consumers.

TABLE 22. - Beehive coke produced and sold or used by producer in the United States in 1949, by States

State	Produced		Used by producer -				Sold	
			In blast furnaces		For other purposes		Furnace 1/	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Kentucky	48,583	(2)	....	....	......	......	21,748	(2)
Pennsylvania	2,898,683	$36,367,550	11,145	(2)	1,735	(2)	2,515,427	$30,992,772
Utah	132,762	(2)	56,373	(2)	......	......	75,315	(2)
Virginia	157,812	2,300,193	....	....	......	......	77,897	1,138,123
West Virginia	177,108	2,535,415	....	....	44	(2)	103,127	1,403,360
Undistributed	....	2,742,469	....	$1,137,134	......	$25,102	....	1,370,665
Total: 1949	3,414,948	43,945,627	67,518	1,137,134	1,779	25,102	2,793,514	34,904,920
1948	6,577,571	79,562,771	261,789	4,109,360	3,160	39,225	5,070,374	58,033,929

State	Sold - continued							
	Foundry		Other industrial (including water gas) 3/		Domestic		Total	
	Net tons	Value	Net tons	Value	Net tons	Value	Net tons	Value
Kentucky	....	....	26,835	(2)	......	....	48,583	(2)
Pennsylvania	162,595	$2,428,822	169,606	$2,230,159	14,041	$163,953	2,861,669	$35,815,706
Utah	335	(2)	1,348	(2)	......	....	76,998	(2)
Virginia	16,656	(2)	62,515	892,734	694	(2)	157,762	2,290,456
West Virginia	20,294	(2)	55,131	793,749	118	(2)	178,670	2,556,442
Undistributed	....	621,570	....	407,777	......	11,316	....	1,783,396
Total: 1949	199,880	3,050,392	315,435	4,324,419	14,853	175,269	3,323,682	42,455,000
1948	496,752	7,482,338	678,521	9,064,943	46,613	553,744	6,292,260	75,134,954

1/ Includes 1,094,907 tons valued at $12,324,470 sold to financially affiliated companies for blast-furnace use.
2/ Included with "Undistributed." 3/ Includes 554 tons valued at $8,045 to financially affiliated companies for other industrial use and 114,973 tons, $1,609,793 for manufacture of water gas sold to other consumers.

TABLE 23. - Stocks of coke and breeze in the United States on January 1, 1950, by States, in net tons

State	Coke				Breeze
	Furnace	Foundry	Domestic and other	Total	
Oven coke:					
Alabama	95,670	3,578	21,382	120,630	21,809
California	10,392	......	....	10,392	36,247
Colorado	5,648	......	....	5,648	3,743
Illinois	46,104	260	8,555	54,919	112,715
Indiana	34,007	1,329	10,321	45,657	136,895
Maryland	58,339	....	....	58,339	248,657
Massachusetts	....	258	120,854	121,112	21,997
Michigan	27,867	813	13,963	42,643	17,643
Minnesota	65,757	......	33,649	99,406	32,357
New Jersey	....	......	111,261	111,261	10,699
New York	60,809	48	233,845	294,702	46,416
Ohio	157,707	3,107	7,315	168,129	137,257
Pennsylvania	235,160	411	91,853	327,424	529,967
Tennessee	1,742	......	....	1,742	3,466
Texas	2,702	2,743	6,096	11,541	267
Utah	15,333	......	26,731	42,064	28,780
West Virginia	20,885	......	24,055	44,940	25,575
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	596	573	154,840	156,009	18,799
Total	838,718	13,120	864,720	1,716,558	1,433,289
At merchant plants	6,941	9,180	708,904	725,025	142,248
At furnace plants	831,777	3,940	155,816	991,533	1,291,041
Beehive coke:					
Pennsylvania	51,012	779	....	51,791	4,511
Utah	248	......	....	248	2,796
Virginia	320	109	200	629	20
West Virginia	....	230	....	230	....
Total	51,580	1,118	200	52,898	7,327

TABLE 24. - Stocks of oven coke at furnace and merchant plants in the United States at end of each month, 1948-49, in net tons 1/

Month	Furnace plants		Merchant plants		Total	
	1948	1949	1948	1949	1948	1949
January	553,944	1,112,854	357,915	428,263	911,859	1,541,117
February	617,770	1,121,882	189,708	382,276	807,478	1,504,158
March	587,060	951,999	128,467	360,976	715,527	1,312,975
April	533,247	1,015,200	113,034	458,337	646,281	1,473,537
May	644,315	1,181,898	157,585	565,779	801,900	1,747,677
June	641,128	1,076,677	214,507	628,559	855,635	1,705,236
July	652,288	1,076,861	287,389	829,556	939,677	1,906,417
August	716,446	1,054,108	406,609	972,704	1,123,055	2,026,812
September	818,759	973,212	468,125	952,499	1,286,884	1,925,711
October	985,707	1,226,852	488,598	892,996	1,474,305	2,119,848
November	1,058,954	1,200,460	529,930	816,841	1,588,884	2,017,301
December	1,072,578	991,533	488,003	725,025	1,560,581	1,716,558

1/ Includes furnace, foundry, and domestic coke, but not breeze.

TABLE 25. - Stocks of bituminous coal at oven-coke plants in the United States at end of each month, 1937 and 1946-49, in net tons

Month	1937	1946	1947	1948	1949
January	8,030,871	5,665,131	5,919,455	8,670,875	12,480,691
February	8,687,389	6,392,605	6,644,699	8,807,168	13,758,864
March	9,638,317	8,269,360	7,516,564	7,434,582	11,451,673
April	8,543,774	4,116,899	5,417,111	4,307,878	12,913,613
May	8,187,883	2,565,010	6,454,434	7,773,429	15,870,342
June	7,770,256	3,629,535	7,095,832	10,474,191	15,746,565
July	7,432,741	3,871,156	4,803,819	8,974,663	13,895,773
August	7,455,932	5,229,600	5,483,859	10,289,146	13,610,849
September	7,760,533	5,925,815	6,216,127	10,967,839	11,774,213
October	8,066,938	6,593,083	7,300,931	11,347,876	9,946,089
November	8,114,094	6,355,321	8,206,627	11,463,542	10,059,834
December	7,273,403	5,238,762	9,147,808	12,104,428	9,892,891

TABLE 26. - Average value per net ton of coke produced and average receipts per net ton from coke sold (merchant sales) in the United States, 1937 and 1945-49

Year	Value per ton produced			Receipts per ton sold 1/		
	Oven coke	Beehive coke	Total	Oven coke	Beehive coke	Total
1937	$5.03	$4.31	$4.98	$6.45	$4.25	$6.10
1945	7.57	7.36	7.56	8.97	7.51	8.69
1946	8.35	8.03	8.32	10.25	8.35	9.85
1947	10.65	9.77	10.57	11.98	10.31	11.54
1948	12.43	12.10	12.40	14.74	12.80	14.22
1949	13.26	12.87	13.24	15.12	13.52	14.85

1/ Revised figures. Recalculated on basis of merchant sales only which exclude sales to financially affiliated companies.

TABLE 27. - Average receipts per net ton of coke sold (merchant sales) in the United States in 1949, by States

State	Oven coke				Beehive coke			
	Furnace	Foundry	Other industrial including water gas	Domestic	Furnace	Foundry	Other industrial including water gas	Domestic
Alabama	$15.60	$17.68	$15.62	$10.24	....	....	....	....
California, Colorado, Texas, and Utah	13.36	18.64	14.13	6.71	(1)	(1)	(1)	....
Connecticut, Massachusetts, and Rhode Island	....	20.48	15.25	15.32	.....	....	....	....
Illinois	16.20	19.97	13.53	12.67	....	....	....	....
Indiana	17.85	(1)	(1)	10.97	....	....	....	....
Kentucky, Missouri, and Tennessee	10.56	20.24	14.54	13.53	(1)	....	(1)	....
Michigan, Minnesota, and Wisconsin	14.39	20.70	12.54	13.91	....	....	....	....
New Jersey and New York	15.65	(1)	(1)	14.19	....	....	....	....
Ohio	12.97	18.29	12.04	11.65	....	....	....	....
Pennsylvania	14.04	20.40	14.65	11.67	$13.14	$14.94	$13.14	$11.68
Virginia	....	....	....	....	14.61	(1)	14.28	(1)
West Virginia	15.50	17.70	9.83	7.20	13.61	(1)	14.40	(1)
Undistributed	....	20.22	14.70	....	14.12	16.67	14.47	13.94
Average 1949	14.09	19.72	13.74	13.50	13.29	15.26	13.71	11.80
At merchant plants	14.57	19.82	14.19	14.28	....	....	....	....
At furnace plants	12.95	19.14	11.87	10.10	....	....	....	....
Average 1948	13.78	18.78	13.45	13.17	12.39	15.06	13.35	11.88

1/ Included with "Undistributed."

TABLE 28. - Coal-chemical materials obtained from coke-oven operations in the United States in 1949 1/
(Exclusive of screenings or breeze)

Product	Produced	Sold			On hand Dec. 31
		Quantity	Value		
			Total	Average	
Tar .... gallons ..	672,407,370	366,424,711	$31,314,137	$0.085	29,570,187
Tar derivatives:					
Creosote oil, distillate as such ... do ..	16,971,247	16,811,860	3,168,278	.188	388,399
Creosote oil, in coal-tar solution . do ..	7,407,357	6,700,909	1,043,297	.156	301,392
Tar acid oil .... do ..	12,246,503	11,885,317	3,540,247	.298	801,381
Phenol .... pounds ..	6,311,948	6,327,442	700,233	.111	203,999
Pitch of tar:					
Soft 2/ .... net tons ..	304,882	8,433	231,310	27.429	12,426
Hard 3/ .... do ..	234,919	5,335	96,205	18.033	531
Other tar derivatives 4/	....	....	1,022,698	......	....
Ammonia:					
Sulfate:					
From coke-oven ammonia .... pounds ..	1,513,613,773	1,421,187,308	31,990,441	.023	138,777,619
From purchased synthetic ammonia .. do ..	117,652,021	118,103,344	2,951,960	.025	628,622
Liquor (NH_3 content) .... do ..	45,499,541	40,582,835	1,600,103	.039	1,707,984
	....	....	5/33,590,544	......	....
Sulfate equivalent of all forms 6/ .. do ..	1,695,611,937	1,583,518,648	....	......	145,609,555
NH_3 equivalent of all forms 6/ ...... do ..	423,902,984	395,879,662	....	......	36,402,389
Gas:					
Used under boilers, etc. ...... M cubic feet ..	7/882,309,827	27,459,095	3,946,741	.144	....
Used in steel or allied plants do ..		329,560,954	55,220,339	.168	....
Distributed through city mains do ..		154,994,365	57,087,956	.368	....
Sold for industrial use .... do ..		34,134,554	5,123,786	.150	....
	7/882,309,827	546,148,968	121,378,832	.222	....
Crude light oil .... gallons ..	8/228,754,333	14,566,187	1,611,058	.111	3,826,701
Light oil derivatives:					
Benzol:					
Motor .... do ..	20,923,704	20,949,753	2,832,688	.135	592,540
All other grades .... do ..	122,741,464	122,796,219	24,368,000	.198	3,819,807
Toluol, crude and refined .... do ..	27,670,579	27,509,355	5,808,080	.211	980,054
Xylol, crude and refined .... do ..	7,264,642	7,181,441	1,817,562	.253	478,607
Solvent naphtha .... do ..	4,997,082	4,786,522	877,562	.183	380,983
Other light oil products 9/ .... do ..	7,122,732	4,803,460	547,875	.114	296,640
	190,720,203	188,026,750	36,251,767	.193	6,548,631
Naphthalene, crude .... pounds ..	70,323,436	59,907,690	2,654,815	.044	12,979,279
Pyridine:					
Crude bases (dry basis) .... gallons ..	395,854	400,655	459,323	1.146	87,892
Refined, or 2°C. .... pounds ..	1,044,643	1,004,125	742,409	.739	56,239
Sodium phenolate .... gallons ..	2,137,813	2,062,129	353,794	.172	229,832
Sulfur .... pounds ..	8,226,949	8,415,925	120,331	.014	1,418,010
Other coal-chemical materials 10/	....	....	441,453	......	....
Value of all coal-chemical materials sold	....	....	238,720,731	......	....

1/ Includes products of tar distillation conducted by coke-oven operators under same corporate name. 2/ Softening point less than 110°F. Includes some medium pitch-of-tar reported by two producers. 3/ Softening point over 160°F. 4/ Cresols, cresylic acid, fuel oil, pitch coke, refined tar, and tar paint. 5/ Excludes value of sulfate made from purchased synthetic ammonia. 6/ Excludes sulfate made from purchased synthetic ammonia. 7/ Includes gas used for heating ovens and gas wasted. 8/ Refined on premises to make derived products shown: 220,888,075 gallons. 9/ Benzol still residue, dicyclopentadiene, orthoxylene, and vented vapors. 10/ Ammonium thiocyanate, picolines, secondary oil, and sodium prussiate.

TABLE 29. - Value of coal-chemical materials and of coke, including breeze, per ton of coke produced in the United States, 1937 and 1945-49

Product	1937	1945	1946	1947	1948	1949
Ammonia and its compounds	$0.326	$0.356	$0.361	$0.423	$0.545	$0.558
Light oil and its derivatives (including naphthalene)	.435	.503	.467	.566	.685	.673
Surplus gas sold or used	1.483	1.413	1.542	1.678	1.839	2.015
Tar sold	.375	.352	.395	.464	.614	.520
Miscellaneous products	.066	.148	.154	.196	.229	.198
	2.685	2.772	2.919	3.327	3.912	3.964
Tar used, not sold	.127	.095	.071	.141	.214	.202
Breeze produced	.162	.202	.217	.242	.293	.281
	2.974	3.069	3.207	3.710	4.419	4.447
Value of coke produced	5.026	7.572	8.345	10.652	12.429	13.264
Total value of coke and coal-chemical materials	8.000	10.641	11.552	14.362	16.848	17.711

TABLE 30. - Coke-oven gas produced and sold in the United States in 1949, by States, in thousands of cubic feet

State	Active plants	Produced	Used in heating ovens	Surplus sold or used			Wasted
				Quantity	Value		
					Total	Average	
Alabama	7	74,427,363	33,596,886	39,364,213	$4,363,678	$0.111	1,466,264
California	1	6,442,551	307,202	6,079,994	(1)	(1)	55,355
Colorado	1	12,674,545	6,344,341	6,114,104	(1)	(1)	216,100
Illinois	8	44,614,351	14,715,723	29,080,923	4,575,340	.157	817,705
Indiana	5	99,654,041	45,210,648	53,337,405	12,956,384	.243	1,105,988
Maryland	1	29,437,739	8,932,530	19,589,209	(1)	(1)	916,000
Massachusetts	2	13,840,134	2,368,483	11,464,519	(1)	(1)	7,132
Michigan	4	37,731,318	5,812,351	31,860,834	5,752,812	.181	58,133
Minnesota	3	11,006,317	4,877,247	5,991,587	1,462,448	.244	137,483
New Jersey	2	20,380,714	5,486,576	14,894,138	(1)	(1)	....
New York	8	79,131,887	20,525,328	57,841,394	20,478,213	.354	765,165
Ohio	15	126,940,529	55,950,361	68,889,655	11,646,307	.169	2,100,513
Pennsylvania	13	218,281,656	92,032,537	124,908,846	24,708,522	.198	1,340,273
Tennessee	1	3,039,543	1,299,459	1,703,347	(1)	(1)	36,737
Texas	2	7,572,525	2,705,043	3,427,187	(1)	(1)	1,440,295
Utah	2	17,046,668	4,632,108	11,898,855	(1)	(1)	515,705
West Virginia	5	49,602,513	14,211,035	34,793,232	5,488,104	.158	598,246
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	6	30,485,433	5,424,557	24,909,526	8,630,849	.346	151,350
Undistributed	....	....	....	....	21,316,175	.284	....
Total 1949	86	882,309,827	324,432,415	546,148,968	121,378,832	.222	11,728,444
At merchant plants	31	176,605,463	40,324,945	135,430,449	50,600,952	.374	850,069
At furnace plants	55	705,704,364	284,107,470	410,718,519	70,777,880	.172	10,878,375
Total 1948	86	994,852,626	370,655,816	607,810,835	125,555,996	.207	16,385,975

1/ Included with "Undistributed."

TABLE 31. - Coke-oven gas and other kinds of gas used in heating ovens in 1949, by States, in thousands of cubic feet 1/

State	Coke-oven gas	Producer gas	Blue-water gas	Blast-furnace gas	Other gases 2/	Total coke-oven gas equivalent
Alabama	33,596,886	....	....	....	472,899	34,069,785
California	307,202	....	....	2,409,661	....	2,716,863
Colorado	6,344,341	....	....	....	....	6,344,341
Illinois	14,715,723	....	....	3,688,766	2,727,848	21,132,337
Indiana	45,210,648	1,125,137	409,039	....	29,755	46,774,579
Maryland	8,932,530	....	....	3,622,034	....	12,554,564
Massachusetts	2,368,483	3,821,181	....	....	....	6,189,664
Michigan	5,812,351	....	....	8,126,280	....	13,938,631
Minnesota	4,877,247	....	183,409	....	18,230	5,078,886
New Jersey	5,486,576	3,767,308	....	....	....	9,253,884
New York	20,525,328	11,094,093	1,273,099	461,457	110,054	33,464,031
Ohio	55,950,361	....	....	1,626,285	169,688	57,746,334
Pennsylvania	92,032,537	1,771,844	....	2,161,310	1,324,826	97,290,517
Tennessee	1,299,459	....	....	....	....	1,299,459
Texas	2,705,043	....	....	....	....	2,705,043
Utah	4,632,108	....	....	2,684,852	....	7,316,960
West Virginia	14,211,035	....	....	5,215,042	733,700	20,159,777
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	5,424,557	5,739,931	....	....	1,419,487	12,583,975
Total	324,432,415	27,319,494	1,865,547	29,995,687	7,006,487	390,619,630
At merchant plants	40,324,945	27,031,087	1,682,138	....	5,632,889	74,671,059
At furnace plants	284,107,470	288,407	183,409	29,995,687	1,373,598	315,948,571

1/ Adjusted to an equivalent of 550 B.t.u. per cubic foot. 2/ Butane-air, natural, oil, propane-air, and spillage gases.

TABLE 32. - Disposal of surplus coke-oven gas in the United States in 1949, by States, in thousands of cubic feet

State	Used by producer –					
	Under boilers			In steel or allied plants		
	Quantity	Value		Quantity	Value	
		Total	Average		Total	Average
Alabama	8,475,400	$939,753	$0.111	23,061,550	$2,625,786	$0.114
California	33,753	(1)	(1)	6,046,241	(1)	(1)
Colorado	....	....	.....	6,114,104	(1)	(1)
Illinois	4,252,005	515,574	.121	6,818,120	(1)	(1)
Indiana	2,856,615	(1)	(1)	40,432,409	7,341,947	.182
Maryland	....	....	.....	11,697,397	(1)	(1)
Massachusetts	3,920	(1)	(1)	....	....	.....
Michigan	2,016,948	(1)	(1)	27,397,856	4,873,857	.178
Minnesota	126,117	16,182	.128	2,132,750	(1)	(1)
New Jersey	....	....	.....	432	(1)	(1)
New York	1,033,742	(1)	(1)	17,240,462	(1)	(1)
Ohio	4,166,544	691,334	.166	50,637,373	8,567,918	.169
Pennsylvania	2,480,725	380,968	.154	93,320,764	15,340,227	.164
Tennessee	246,553	(1)	(1)	....	....	.....
Texas	....	....	.....	3,427,187	(1)	(1)
Utah	19,024	(1)	(1)	11,619,572	(1)	(1)
West Virginia	843,247	(1)	(1)	29,614,737	4,795,131	.162
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	904,502	148,214	.164	....	....	.....
Undistributed	....	1,254,716	.178	....	11,675,473	.179
Total 1949	27,459,095	3,946,741	.144	329,560,954	55,220,339	.168
At merchant plants	4,539,621	496,898	.109	6,136,563	1,332,335	.217
At furnace plants	22,919,474	3,449,843	.151	323,424,391	53,888,004	.167
Total 1948	33,152,844	4,086,099	.123	369,457,173	57,728,546	.156

State	Sold					
	Distributed through city mains			For industrial purposes		
	Quantity	Value		Quantity	Value	
		Total	Average		Total	Average
Alabama	6,524,845	$672,646	$0.103	1,302,418	$125,493	$0.096
California	....	....	.....	....	....	.....
Colorado	....	....	.....	....	....	.....
Illinois	17,590,123	2,703,372	.154	420,675	(1)	(1)
Indiana	7,739,614	4,336,691	.560	2,308,767	(1)	(1)
Maryland	7,891,812	(1)	(1)	....	....	.....
Massachusetts	11,408,420	(1)	(1)	52,179	(1)	(1)
Michigan	....	....	.....	2,446,030	(1)	(1)
Minnesota	2,197,600	(1)	(1)	1,535,120	(1)	(1)
New Jersey	14,893,706	(1)	(1)	....	....	.....
New York	38,591,974	16,657,366	.432	975,216	275,047	.282
Ohio	3,543,368	955,242	.270	10,542,370	1,431,813	.136
Pennsylvania	23,382,752	8,288,908	.354	5,724,605	698,419	.122
Tennessee	1,456,794	(1)	(1)	....	....	.....
Texas	....	....	.....	....	....	.....
Utah	....	....	.....	260,259	(1)	(1)
West Virginia	....	....	.....	4,335,248	(1)	(1)
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	19,773,357	7,994,912	.404	4,231,667	487,723	.115
Undistributed	....	15,478,829	.409	....	2,105,291	.185
Total 1949	154,994,365	57,087,966	.368	34,134,554	5,123,786	.150
At merchant plants	103,589,317	45,530,189	.440	21,164,948	3,241,530	.153
At furnace plants	51,405,048	11,557,777	.225	12,969,606	1,882,256	.145
Total 1948	169,347,914	58,229,890	.344	35,852,904	5,511,461	.154

1/ Included with "Undistributed."

TABLE 33. - Coke-oven tar produced, used by producer, and sold in the United States in 1949, by States, in gallons

State	Produced		Used by producer -			
	Total	Per ton of coal coked	For refining or topping	As fuel under boilers	In open hearth or allied plants	Otherwise
Alabama	57,302,383	7.87	1,569,567	1,292,377	23,095,008	169,576
California	5,762,938	9.96	5,947,809	....	....	....
Colorado	10,270,069	9.38	9,121,168	....	1,178,087	5,540
Illinois	30,720,808	6.69	2,465,300	243,769	....	129,035
Indiana	59,160,360	5.67	6,014,965	330,179	14,530,176	1,182,718
Maryland	21,268,005	7.49	....	....	4,054,134	....
Massachusetts	9,360,788	7.40	....	....	....	....
Michigan	24,712,016	7.10	....	299,954	....	750
Minnesota	6,702,604	6.10	....	....	2,530,353	....
New Jersey	14,310,247	7.78	....	....	....	....
New York	58,910,773	7.97	15,374,060	....	....	8,272
Ohio	89,561,758	7.06	1,947,593	542,089	37,725,049	592,302
Pennsylvania	195,182,939	9.02	124,228,499	19,510	48,321,510	199,100
Tennessee	2,169,881	7.12	....	....	....	....
Texas	4,766,620	6.72	....	....	....	....
Utah	15,273,968	10.42	....	....	6,183,154	....
West Virginia	46,179,297	10.22	....	15,660	....	60,816
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	20,791,916	7.37	....	....	....	....
Total 1949	672,407,370	7.81	166,668,961	2,743,538	137,617,471	2,348,109
At merchant plants	132,943,432	7.84	1,569,567	15,660	....	58,782
At furnace plants	539,463,938	7.81	165,099,394	2,727,878	137,617,471	2,289,327
Total 1948	738,755,106	7.60	194,234,529	1,439,343	136,281,853	2,341,804

State	Sold -					On hand Dec. 31
	For use as fuel 1/	For refining into tar products	Total			
			Quantity	Value		
				Total	Average	
Alabama	....	32,164,963	32,164,963	$2,863,351	$0.089	1,944,024
California	....	....	....	....	.....	157,370
Colorado	....	11,086	11,086	(2)	(2)	116,195
Illinois	527,710	27,898,283	28,425,993	2,487,948	.088	1,018,321
Indiana	....	37,362,257	37,362,257	3,306,929	.089	2,606,283
Maryland	....	17,672,581	17,672,581	(2)	(2)	2,179,223
Massachusetts	205,075	10,065,628	10,270,703	(2)	(2)	404,427
Michigan	....	25,199,651	25,199,651	2,098,696	.083	1,122,186
Minnesota	....	4,401,779	4,401,779	(2)	(2)	501,754
New Jersey	....	14,375,888	14,375,888	(2)	(2)	368,400
New York	3,793,754	39,544,913	43,338,667	3,850,035	.089	3,640,745
Ohio	2,802,915	46,222,806	49,025,721	4,165,617	.085	4,496,979
Pennsylvania	56,402	21,218,372	21,274,774	1,772,204	.083	8,413,532
Tennessee	....	2,176,942	2,176,942	(2)	(2)	31,142
Texas	....	4,873,484	4,873,484	(2)	(2)	311,953
Utah	....	9,093,705	9,093,705	(2)	(2)	636,481
West Virginia	20,134,174	25,837,970	45,972,144	4,017,525	.087	796,240
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	....	20,784,373	20,784,373	1,728,320	.083	824,932
Undistributed	....	....	....	5,023,512	.080	....
Total 1949	27,520,030	338,904,681	366,424,711	31,314,137	.085	29,570,187
At merchant plants	205,075	132,209,129	132,414,204	11,273,733	.085	4,759,639
At furnace plants	27,314,955	206,695,552	234,010,507	20,040,404	.086	24,810,548
Total 1948	34,677,377	367,730,103	402,407,480	41,957,748	.104	32,828,763

1/ Comprises 27,083,871 gallons sold to affiliated companies and 436,159 gallons sold to other purchasers. 2/ Included with "Undistributed."

TABLE 34. - Coke-oven ammonia produced and sold in the United States in 1949, by States, in pounds

State	Active plants	Produced			
		Sulfate equivalent	Per ton of coal coked	As sulfate	As liquor (NH_3 content)
Alabama	7	170,785,314	23.45	163,740,710	1,761,151
California	1	15,359,724	26.55	15,359,724	....
Colorado	1	24,601,800	22.46	24,601,800	....
Illinois	6	77,673,628	18.96	77,673,628	....
Indiana	5	172,487,954	16.53	150,928,506	5,389,862
Maryland	1	58,822,368	20.71	58,822,368	....
Massachusetts	1	21,569,140	17.35	21,569,140	....
Michigan	4	66,790,043	19.19	23,014,647	10,943,349
Minnesota	3	18,303,576	16.66	18,303,576	....
New Jersey	2	36,300,272	19.75	36,300,272	....
New York	8	148,222,005	20.06	122,767,977	6,363,507
Ohio	15	240,297,049	18.94	192,181,613	12,028,859
Pennsylvania	13	455,163,319	21.03	453,025,899	534,355
Tennessee	1	6,265,772	20.55	6,265,772	....
Texas	2	16,028,238	22.60	16,028,238	....
Utah	2	37,873,728	25.82	37,873,728	....
West Virginia	3	77,257,344	21.97	77,257,344	....
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	5	51,810,663	19.08	17,898,831	8,477,958
Total 1949	80	1,695,611,937	20.08	1,513,613,773	45,499,541
At merchant plants	26	315,106,521	20.00	191,807,057	30,824,866
At furnace plants	54	1,380,505,416	20.10	1,321,806,716	14,674,675
Total 1948	81	1,859,386,041	19.52	1,661,365,037	49,505,251

State	Sold as -				On hand Dec. 31	
	Sulfate		Liquor (NH_3 content)		Sulfate	Liquor (NH_3 content)
	Quantity	Value	Quantity	Value		
Alabama	161,467,631	$3,594,571	1,722,461	(1)	7,274,795	57,502
California	14,781,890	(1)	....	....	594,634	....
Colorado	22,688,795	(1)	....	....	4,293,365	....
Illinois	75,633,755	1,572,279	....	....	3,400,857	....
Indiana	126,395,129	2,819,832	4,689,559	$172,401	31,991,750	444,003
Maryland	57,526,260	(1)	....	....	2,573,464	....
Massachusetts	20,673,680	(1)	....	....	1,323,860	....
Michigan	19,708,851	(1)	9,054,843	(1)	3,408,953	228,581
Minnesota	15,626,190	354,822	....	....	3,369,559	....
New Jersey	35,598,060	(1)	....	....	2,450,495	....
New York	120,592,555	2,755,199	5,867,639	231,731	6,220,526	156,147
Ohio	184,177,675	4,135,418	10,434,065	401,273	16,265,885	415,319
Pennsylvania	415,409,567	9,339,368	508,575	(1)	46,264,251	50,642
Tennessee	5,839,361	(1)	....	....	528,965	....
Texas	15,451,060	(1)	....	....	777,878	....
Utah	35,750,309	(1)	....	....	4,139,121	....
West Virginia	76,091,065	1,660,494	....	....	3,492,065	....
Connecticut, Kentucky, Missouri, Rhode Island, and Wisconsin	17,775,475	412,835	8,305,693	319,736	407,196	355,790
Undistributed	....	5,345,623	....	474,962	....	....
Total 1949	1,421,187,308	31,990,441	40,582,835	1,600,103	138,777,619	1,707,984
At merchant plants	185,567,165	4,281,092	32,146,926	1,253,548	11,489,903	1,063,894
At furnace plants	1,235,620,143	27,709,349	8,435,909	346,555	127,287,716	644,090
Total 1948	1,665,530,716	35,561,991	46,649,246	1,617,277	47,850,209	992,784

1/ Included with "Undistributed."

TABLE 35. - Coke-oven crude light oil produced in the United States and derived products obtained and sold in 1949, by States, in gallons

State	Active plants	Produced		Refined on premises 1/	Derived products			On hand Dec. 31
		Total	Per ton of coal coked		Produced	Sold 2/		
						Quantity	Value	
Alabama	7	20,357,263	2.80	20,317,842	17,524,322	17,317,097	$3,401,061	332,516
California	1	1,984,029	3.43	1,979,007	1,688,334	1,524,105	(3)	21,109
Colorado	1	3,425,281	3.13	3,411,601	3,090,811	2,877,767	(3)	61,988
Illinois	7	10,991,453	2.43	8,225,634	6,865,983	6,939,697	1,359,717	204,412
Indiana	5	24,047,464	2.30	24,584,679	22,298,378	22,085,882	4,458,501	368,576
Maryland	1	11,132,933	3.92	11,124,026	9,898,669	10,187,101	(3)	154,991
Michigan	4	7,214,115	2.42	5,827,208	5,275,659	4,946,011	1,049,001	248,770
New York	8	19,157,352	2.59	26,876,247	23,552,403	24,016,073	4,594,243	199,238
Ohio	15	35,364,107	2.79	31,263,152	25,278,981	24,825,828	4,512,794	412,309
Pennsylvania	13	64,271,787	2.97	64,342,897	56,045,802	55,218,791	10,685,958	1,296,475
Tennessee	1	823,265	2.70	831,806	752,920	800,116	(3)	....
Texas	2	1,960,900	2.77	1,960,900	1,586,893	1,562,959	(3)	62,505
Utah	2	5,536,959	3.78	5,505,422	4,423,619	4,417,698	(3)	107,630
West Virginia	5	13,668,036	3.02	11,515,647	9,698,320	8,551,014	1,568,019	71,568
Kentucky, Massachusetts, Minnesota, Missouri, New Jersey, and Wisconsin	6	8,819,389	2.19	3,122,007	2,738,909	2,756,611	530,084	284,514
Undistributed	....	....	....	....	....	....	3,992,389	....
Total 1949	78	228,754,333	2.77	220,888,075	190,720,203	188,026,750	36,251,767	3,826,701
At merchant plants	25	32,439,504	2.29	26,750,091	23,966,488	22,831,015	4,214,502	918,812
At furnace plants	53	196,314,829	2.87	194,137,984	166,753,715	165,195,735	32,037,265	2,907,889
Total 1948	79	255,089,065	2.73	242,956,215	208,551,083	204,409,092	40,162,119	3,794,999

1/ Comprises 213,723,170 gallons of crude light oil from own production and 7,164,905 gallons purchased from other coke plants. 2/ Excludes 14,566,187 gallons of crude light oil valued at $1,611,058 sold as such. 3/ Included with "Undistributed."

TABLE 36. - Trend in yields of products obtained from refining crude light oil at oven-coke plants in the United States, 1937 and 1941-49, in percent

Year	Benzol		Toluol crude and refined	Xylol crude and refined	Solvent naphtha	Other light oil products
	Motor	All other grades				
1937	52.5	11.9	11.5	2.5	3.1	4.5
1941	47.2	16.8	13.0	3.4	2.3	3.6
1942	26.8	35.3	13.4	3.9	2.2	3.8
1943	8.6	53.9	13.1	3.6	2.1	3.6
1944	7.1	56.6	12.9	3.3	2.1	3.5
1945	12.3	53.9	11.5	3.2	2.0	3.3
1946	13.8	55.3	8.3	3.0	2.2	3.8
1947	6.5	60.1	10.9	3.0	2.3	3.5
1948	3.7	61.7	11.7	3.0	2.4	3.3
1949	9.5	55.6	12.5	3.3	2.3	3.2

TABLE 37. - Production of benzol and toluol, by grades, at oven-coke plants in the United States, 1941-49, in gallons

Year	Benzol				Toluol		
	Motor	Nitration or 1° C.	Pure commercial or 2° C.	All other	Nitration or 1° C.	Pure commercial or 2° C.	All other
1941	106,372,000	15,414,500	18,286,400	4,182,600	14,689,800	13,268,500	1,378,900
1942	64,797,600	25,624,400	53,617,900	6,014,700	25,160,200	5,044,800	2,109,600
1943	21,267,900	35,047,800	93,246,600	4,144,800	27,152,300	2,394,700	2,725,600
1944	18,556,600	41,285,800	102,436,500	3,187,600	29,771,100	2,149,600	1,607,500
1945	28,768,100	39,166,500	86,237,300	1,266,700	23,355,400	2,219,700	1,494,200
1946	27,398,900	35,739,300	71,631,700	2,308,000	12,518,000	2,796,400	1,205,400
1947	15,302,700	42,475,300	100,111,800	2,470,800	20,514,100	4,939,500	892,800
1948	9,014,300	43,541,200	103,356,300	3,101,400	22,899,700	5,280,800	267,800
1949	20,923,700	28,938,700	91,717,300	2,035,600	20,808,300	6,317,200	545,100

TABLE 38. - Crude naphthalene produced and sold by coke-plant operators in the United States, 1937 and 1944-49

Year	Produced (pounds)	Sold			Receipts per ton of coke
		Pounds	Value		
			Total	Average per pound	
1937	60,797,108	60,315,581	$1,182,992	$0.020	$0.024
1944	103,041,023	103,839,789	2,094,596	.020	.031
1945	87,677,299	86,936,517	1,806,967	.021	.029
1946	71,605,138	71,769,750	1,602,739	.022	.030
1947	98,378,875	98,364,997	3,021,152	.031	.045
1948	105,816,670	102,827,490	4,545,867	.044	.067
1949	70,823,436	59,907,690	2,654,815	.044	.044

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary** JAMES BOYD, **Director**

JUL 26 19

FOR RELEASE JUNE 24, 1950.

MINERAL MARKET REPORT
MMS NO. 1880

PHOSPHATE ROCK INDUSTRY OF THE WESTERN STATES - IDAHO, MONTANA, UTAH, AND WYOMING - 1949.

The total marketed production of Western States phosphate rock rose slightly in 1949, according to reports from producers to the Bureau of Mines, United States Department of the Interior, from 822,004 long tons in 1948 to 826,474 tons in 1949. Increases in Montana counterbalanced declines in Idaho and Wyoming. The total value fell from $4,537,453 in 1948 to $4,489,455 in 1949, the increase of $854,076 in the value of the sales of Montana phosphate rock being insufficient to make up for the declines in the value of the sales of the other States. Phosphate rock was produced in 1949 in all four States of the western field - Idaho, Montana, Utah, and Wyoming. There were no shipments, however, of Utah rock.

Idaho, in 1949, retained its position as the leading phosphate-rock producer of the Western States. Although the marketed output dropped considerably below 1948, it was greater than for any year except 1947 and 1948. Totals for the State cannot be given without disclosing the production of individual companies. Its lead over Montana, still in second position, has decreased greatly. Only two companies were reported operating in Idaho in 1949. The larger producer was again the Simplot Fertilizer Co., Pocatello, Idaho, which continued its open-pit mining operations on the Fort Hall Indian Reservation, Bingham County, about 16 miles east of Fort Hall. Large quantities of phosphate rock were shipped to the Westvaco electric furnace plant at Pocatello for the production of elemental phosphorus. A considerable tonnage of higher grade rock was used by the Simplot company for the production of superphosphate; and a large amount was exported. The Westvaco Chemical Division, Food Machinery & Chemical Corp. completed the construction of its first electric furnace at Pocatello, Idaho, and began its operation in the summer of 1949. Construction of a second furnace was in progress in the later part of the year. The other producer, the Anaconda Copper Mining Co., 25 Broadway, New York 4, N. Y., operated its No. 3 mine at Conda, Caribou County, Idaho, the phosphate rock produced being shipped to its plant at Anaconda, Montana, where it was used largely for the production of superphosphate. A smaller quantity went into the manufacture of phosphoric acid and phosphate chemicals. None was exported.

Prepared by Bertrand L. Johnson, and E. M. Tucker, under the supervision of G. W. Josephson, Chief, Nonmetal Economics Branch, Minerals Division.

Montana phosphate rock production continues to increase; its rising production approaching the declining output of Idaho in 1949. Shipments from Montana mines in 1949 totaled 355,169 long tons valued at $2,574,330. Both quantity and value exceeded those of 1948; both were new records. The Montana Phosphate Products Co., was the largest producer and shipper in the Western States. It operated its Anderson, Anaconda, and Graveley mines, as well as several Government leases, all in the Garrison district. All of the rock shipped was exported to the plant of the parent company at Trail, British Columbia. Mining operations were carried on by George Relyea, at the Relyea mine in the Garrison district, and the production was also shipped to Trail, British Columbia. The Anderson Brothers Mining Company mined and shipped a small tonnage of phosphate rock in 1949 from a property in the Garrison district. In the Philipsburg district, Granite County, only Manganese Products, Inc., and Soluble Phosphates, Ltd., Maxville, Montana, were in operation in 1949. The former operated the Edgar mine, near Hall, Granite County, and shipped the phosphate rock to Seattle, Washington, for the production of a fused calcium-magnesium-phosphate fertilizer. A small tonnage of phosphate which was produced by Soluble Phosphates, Ltd., and sold for direct application to the soil as a fertilizer.

Only a few hundred tons of phosphate rock are known to have been produced in Utah in 1949. This resulted from development work at the property of the F. J. Pearl Minerals Co., at the south end of the Crawford Mountains, Rich County, in northeastern Utah near Woodruff. Development work done consisted of a 165-foot tunnel driven in steeply-inclined phosphate-rock bed. No rock was shipped from this property in 1949.

Reported production and shipments of phosphate rock in Wyoming in 1949 decreased greatly from the 1948 figures, but the State, in third place, remains an important producer. There was only one producing company, the San Francisco Chemical Co., operating the Leefe mine on land leased from the Stauffer Chemical Co., in the Beckworth Hills syncline, 3½ miles west of Sage, Lincoln County, southwestern Wyoming. At the property of Phosphate Mines, Inc., 7 miles north of Kemmerer, Wyoming, only development work was done in 1949, but several hundred tons of phosphate rock were sold from stock for direct application to the soil as a fertilizer.

The average value per ton of the Western States phosphate rock sold or used, as reported by producers to the Bureau of Mines, decreased slightly - falling from $5.52 in 1948 to $5.43 in 1949.

Western States phosphate rock sold or used by producers, 1945-49.

Year	Idaho			Montana		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1945......	123,340	$673,627	$5.46	150,858	$916,288	$6.07
1946......	1/ 312,658	1/ 1,805,103	1/ 5.77	179,944	1,207,054	6.71
1947......	1/ 905,214	1/ 4,922,829	1/ 5.44	236,229	1,549,317	6.56
1948......	431,392	2,094,197	4.85	248,683	1,720,254	6.92
1949......	2/ 471,305	2/ 1,915,125	2/ 4.06	355,169	2,574,330	7.25

	Wyoming			Total		
	Long tons	Value at mines		Long tons	Value at mine	
		Total	Average		Total	Average
1945......	---	---	---	274,198	$1,589,915	$5.80
1946......	---	---	---	492,602	3,012,157	6.11
1947......	51,845	$290,484	$5.60	1,193,288	6,762,630	5.67
1948......	1/ 141,929	1/ 723,002	1/ 5.09	822,004	4,537,453	5.52
1949......	(3)	(3)	(3)	826,474	4,489,455	5.43

1/ Includes Utah.
2/ Includes Wyoming.
3/ Included in Idaho.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

JUN 26 1950

FOR RELEASE JUNE 23, 1950.

MINERAL MARKET REPORT
MMS NO. 1881

METAL MINING IN THE STATES EAST OF THE MISSISSIPPI RIVER, 1949 - FINAL ANNUAL FIGURES

Lower prices for the base metals and work stoppages in the steel and zinc smelting and fabricating industries, which directly affected the operation of some mines, resulted in a decreased output of gold, copper, lead, and zinc in 1949 in the States East of the Mississippi River, according to the Bureau of Mines, United States Department of the Interior. Output from mines producing silver as a byproduct were not greatly affected and the quantity of metal recovered increased slightly over that of 1948. Gold mining was at a virtual standstill, and the gold and silver output was chiefly a byproduct of base metal mining. Prices for gold and domestically mined silver remained the same throughout the year. Copper quotations, Connecticut Valley, opened in 1949 at 23.5 cents a pound, dropped to a low of 16.0 cents in mid-June and closed at 18.5 cents. Lead quotations, New York, opened at 21.5 cents a pound and closed at 12.0 cents. Zinc quotations, St. Louis, opened at 17.5 cents and closed at 9.75 cents.

Outputs in 1949 (in terms of recoverable metal) were 1,967 fine ounces of gold, 101,612 fine ounces of silver, 32,955 short tons of copper, 9,755 short tons of lead, and 156,298 short tons of zinc, decreases from the 1948 outputs of 21 percent for gold, 22 percent for copper, 9 percent for lead and 12 percent for zinc, and an increase of less than 1 percent for silver. The outputs in 1948 were 2,479 fine ounces of gold, 101,171 fine ounces of silver, 42,025 short tons of copper, 10,706 short tons of lead, and 177,787 short tons of zinc.

The prices used for calculating the value of the production in 1949 are $35.00 per fine ounce of gold and $0.9050505 per fine ounce of silver, and the average weighted yearly prices of $0.197 per pound of copper, $0.158 per pound of lead, and $0.124 per pound of zinc. In 1948 the price used for gold was $35.00, silver $0.9050505, and the average weighted yearly price for copper was $0.217, lead $0.179, and zinc $0.133. In valuing the zinc output of New Jersey, however, the total is reached by adding to the value of zinc recoverable as metal and oxide the charges for transportation, smelting and manufacturing. Thus computed the value of the zinc production from New Jersey in 1949 was $14,443,062; in 1948 it was $20,709,849.

GOLD

Gold recovered from mines East of the Mississippi River was 21 percent less in 1949 than in 1948. Output in 1949 was 1,967 fine ounces compared with 2,479 ounces in 1948. This decrease was chiefly due to loss of output at the Cornwall mine of the Bethlehem Steel Co. during the steel strike from October 1 to October 31. Only 31 fine ounces of gold was reported recovered

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

Prepared by Samuel A. Gustavson, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

from gold ores in 1949, 13 ounces from North Carolina and 18 ounces from Georgia. The remainder was recovered as a byproduct from treatment of copper concentrates produced at the Cornwall mine of the Bethlehem Steel Co. in Pennsylvania, the Tennessee Copper mines in Tennessee, and the Elizabeth mine of the Vermont Copper Co. in Vermont.

SILVER

Silver recovered chiefly as a byproduct from copper and zinc-lead mines in States East of the Mississippi River was about the same in 1949 as in 1948. Production in 1949 was 101,612 fine ounces. The principal producers in order of output were the Tennessee Copper Co. in Tennessee, Vermont Copper Co. in Vermont, St. Joseph Lead Co. in New York, and Bethlehem Steel Co. in Pennsylvania. Other silver is recovered as a byproduct from lead concentrates produced by several mines in the Southern Illinois and Kentucky fluorspar mining district. Steady operation and increased output from silver producing mines in Tennessee, Vermont and New York offset the decrease in production of silver reported by mines in Pennsylvania and Southern Illinois. Of the total silver recovered in 1949, 21,506 ounces were from lead, zinc, and zinc-lead ores, and 80,106 ounces from copper, copper-zinc, and magnetite-pyrite-chalcopyrite ores.

COPPER

Copper production in 1949 in States East of the Mississippi River was 32,955 tons, 22 percent less than the 1948 output of 42,025 tons. This decrease is the result of the closing of the Isle Royale Copper Co's. mines in December 1948 and the cessation of underground mining operations and part of the reclamation work by the Calumet & Hecla Mining Co. from May 1 to September 6 in Michigan; and the loss of output during the steel strike (October 1 - 31) at the Bethlehem Steel Co. mine in Pennsylvania. The Tennessee Copper Co., Copper Range Co., and Quincy Mining Co. produced at about the same rate as in 1948, while the Vermont Copper Co. increased its output by about 35 percent.

The principal producers in 1949 were the Calumet & Hecla Consolidated Copper Co., Copper Range Co., and Quincy Mining Co. in Michigan; Bethlehem Steel Co. in Pennsylvania; Tennessee Copper Co. in Tennessee; and the Vermont Copper Co. in Vermont.

LEAD

Lead was produced in 6 of the States East of the Mississippi River during 1949 compared with 5 in 1948. However, the total output decreased 9 percent to 9,755 tons from 10,706 tons. Reduced output from the Austinville mine of the New Jersey Zinc Co. in Virginia accounted for most of this decrease. Kentucky and Wisconsin mines recorded slight decreases; Illinois and New York mines recorded a slight increase, and in addition a small output was reported from mines near Embreeville, Tenn., which State reported no production of lead in 1948. The principal producers were the New Jersey Zinc Co. in Virginia, Ozark-Mahoning Co. in Southern Illinois, St. Joseph Lead Co. in New York, and Tri-State Zinc, Inc. in Northern Illinois. Virtually all the lead produced in the region is a coproduct or byproduct of zinc and fluorspar mining.

ZINC

Zinc production in States East of the Mississippi River was 156,298 tons in 1949, a decrease of 21,489 tons (12 percent) from the 1948 production of 177,787 tons. Loss of output from the mines of the New Jersey Zinc Co. in New Jersey accounted for most of the decrease in zinc output for the region. The New Jersey mines were idle from September 26 to the end of the year because of a strike at the Palmerton, Pa. zinc smelter. Decreased zinc production also was reported for the Austinville (Virginia) mine of the New Jersey Zinc Co., and mines in the Kentucky-Southern Illinois district. New York, Tennessee, and the Wisconsin-Northern Illinois district reported a greater output in 1949 than in 1948.

In Kentucky and Southern Illinois the principal zinc producers were the Ozark-Mahoning Co., and the Minerva Oil Co. The slackening in demand for fluorspar in this district was the principal reason for a decrease in the quantity of zinc produced. In New York, the St. Joseph Lead Co. mines were worked continuously; operations at the Universal Exploration Co. mine were curtailed during the strike (October 1 - November 12) at the Donora, Pa., zinc smelter.

In Tennessee, the Tennessee Copper Co. operated steadily, recording a small increase in zinc production. The American Zinc Co. of Tennessee suspended operations at its Athletic mine on June 20. However, the company worked the Grasselli, Jarnagin and Mascot mines throughout the year, except for about a 3-week vacation period in July. Although the Universal Exploration Co. mine near Jefferson City was idle from October 7 to November 21, partly due to the shut-down at the Donora, Pa., smelter, output for the year was greater than in 1948.

In the Wisconsin-Northern Illinois district two new mines were opened. The Eagle-Picher Mining & Smelting Co. completed the Graham mill and started production in April at its properties located a few miles north of Galena, Ill., and the Calumet & Hecla Consolidated Copper Co. built the Shullsburg mill and began work in September at its properties in Wisconsin. The largest producer in the district was Tri-State Zinc, Inc. in Illinois. The Vinegar Hill Zinc Co., formerly the largest producer, closed its custom mill in Wisconsin August 4. However, exploration was continued and the construction of a mill was begun at the company's properties south of Shullsburg.

Mine production of gold, silver, copper, lead, and zinc in States East of the Mississippi River, 1949, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January..................	207	8,356	3,328	787	14,858
February.................	180	9,021	3,174	635	14,064
March....................	220	8,692	3,343	824	15,554
April....................	189	9,103	3,128	879	14,915
May......................	210	9,023	1,742	857	14,434
June.....................	180	8,924	1,597	839	14,953
July.....................	162	8,265	1,588	736	12,592
August...................	180	8,318	1,795	806	14,054
September................	153	8,100	3,316	922	13,304
October..................	23	7,809	3,106	890	8,988
November.................	102	7,905	3,198	881	8,993
December.................	161	8,096	3,640	699	9,589
Total: 1949..........	1,967	101,612	32,955	9,755	156,298
1948..........	2,479	101,171	42,025	10,706	177,787

Mine production of gold, silver, copper, lead, and zinc in States East of the Mississippi River, 1948-49, in terms of recoverable metals

State	Gold		Silver		Copper		Lead		Zinc		Total Value
	Fine ounces	Value	Fine ounces	Value	Short tons	Value	Short tons	Value	Short tons	Value	
Georgia.....	18	$ 630	–	–	–	–	–	–	–	–	$ 630
Kentucky....	–	–	–	–	–	–	187	$ 59,092	935	$ 231,880	290,972
Illinois:											
Northern..	–	–	–	–	–	–	1,189	375,724	12,551	3,112,648	3,488,372
Southern..	–	–	3,128	$ 2,831	–	–	2,635	832,660	5,606	1,390,288	2,225,779
Michigan....	–	–	–	–	19,506	$ 7,685,364	–	–	–	–	7,685,364
New Jersey..	–	–	–	–	–	–	–	–	50,984	a/14,443,062	a/14,443,062
New York....	–	–	18,378	16,633	–	–	1,317	416,172	37,973	9,417,304	9,850,109
North Carolina..	13	455	–	–	–	–	–	–	–	–	455
Pennsylvania	1,645	57,575	10,827	9,799	b/	b/	–	–	–	–	b/67,374
Tennessee...	171	5,985	41,833	37,861	b/13,449	b/5,298,906	257	81,212	29,788	7,387,424	b/12,811,388
Vermont.....	120	4,200	27,446	24,840	b/	b/	–	–	–	–	b/29,040
Virginia....	–	–	–	–	–	–	3,313	1,046,908	13,166	3,265,168	4,312,076
Wisconsin...	–	–	–	–	–	–	857	270,812	5,295	1,313,160	1,583,972
Total: 1949	1,967	68,845	101,612	91,964	32,955	12,984,270	9,755	3,082,580	156,298	40,560,934	56,788,593
1948	2,479	86,765	101,171	91,565	42,025	18,238,850	10,706	3,832,748	177,787	47,696,879	69,946,807

a/ Estimated smelting value of recoverable zinc content of ore after freight, haulage, smelting and manufacturing charges are added.

b/ Data for copper in Pennsylvania and Vermont included under Tennessee; Bureau of Mines not at liberty to publish separate figures for Tennessee.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman, Secretary **JAMES BOYD, Director**

FOR RELEASE JULY 6,1950 MINERAL MARKET REPORT, NO. MMS 1882

SALES OF LP-GAS LEVEL OFF IN 1949

By A. T. Coumbe 1/ and I. F. Avery 2/

A large annual gain in market requirements for LP-gas, evident in recent years, failed to repeat in 1949, when sales of 2,836,599,000 gallons were only about 4 percent over the 1948 total of 2,736,801,000 according to a survey made by the Petroleum Economics Branch, Bureau of Mines, United States Department of the Interior. The increase of 100 million gallons in sales of LP-gas in 1949 over the 1948 total is less than a fifth of the volume expansion in deliveries reported for 1948. Nominal gains in market requirements were reported for most areas in 1949, except for District 3 where sales remained at about the same level as in the previous year and District 5, where the 1949 total was 4 percent below the 1948 demand. Exports of LP-gas declined in 1948, however an upward trend was again evident in 1949, as indicated by statistics released by the Bureau of Census, United States Department of Commerce, when over-seas shipments were 53,383,000 gallons, a gain of 17 percent over the 1948 total of 45,520,000 gallons.

TABLE 1. SALES OF LIQUEFIED PETROLEUM GASES IN THE UNITED STATES

(Thousands of Gallons)

Year	Butane	Percent of Total	Propane	Percent of Total	Butane-Propane Mixture	Percent of Total	Total LP-gas	Percent	Percentage change From Previous Year
1944	273,116	25.8	335,884	31.7	451,156	42.5	1,060,156	100.0	-
1945	325,140	25.5	444,581	34.8	507,045	39.7	1,276,766	100.0	20.4
1946	441,418	25.9	551,250	32.3	711,594	41.8	1,704,262	100.0	33.5
1947	398,635	18.0	863,686	39.1	947,476	42.9	2,209,797	100.0	29.7
1948	512,615	18.7	1,279,744	46.8	944,442	34.5	2,736,801	100.0	23.8
1949	488,801	17.2	1,403,359	49.5	944.439	33.3	2,836,599	100.0	3.6

1/ Petroleum Economist, Petroleum Economics Branch, Fuels & Explosives Division, Bureau of Mines.

2/ Commodity Specialist, Petroleum Economics Branch, Fuels & Explosives Division, Bureau of Mines.

The pronounced shift to a greater relative use of propane, evident in recent years was again repeated in 1949, when sales of 1,403,359,000 gallons were 10% over the 1948 total of 1,279,744,000 and made up about one-half of all deliveries compared with a 47-percent share in 1948. Requirements for butane declined by 5 percent from 512,615,000 gallons in 1948 to 488,801,000 in 1949, and the relative part of the market for this gas dropped from 19 percent of the total in 1948 to 17 percent in 1949. There was practically no change in the volume reported for butane-propane mixtures (944,439,000 gallons in 1949 compared with 944,442,000 in 1948) while the relative proportion for "mixtures" declined from about 35 percent of total sales in 1948 to 33 percent in 1949. Propane reported for domestic (household) and commercial use, gas manufacturing, chemical raw material, internal-combustion-engine fuel, and miscellaneous uses all showed gains in 1949 over 1948, while quantities indicated for industrial fuel and synthetic rubber components were lower. More butane was sold for domestic consumption and miscellaneous uses in 1949 than in 1948, however all other uses showed declines. Gains in sales of butane-propane mixtures for domestic fuel and chemical raw material in 1949 were completely off-set by lower demand for other principal uses.

TABLE 2. TRENDS IN THE SALES OF LP-GAS BY PRINCIPAL USES

(Thousands of Gallons)

Year	Domestic	Chemical	Synthetic Rubber	Industrial	Gas Mfg.	Internal Combustion	All Other	Total
1940	134,018	34,671	-	69,892	20,285	53,918	672	313,456
1941	220,722	44,206	-	98,728	25,255	66,871	7,070	462,852
1942	299,559	53,038	-	114,132	31,366	82,456	4,889	585,440
1943	339,380	55,356	1/	149,429	37,519	87,834	5,715	675,233
1944	445,617	151,985	162,085	162,018	45,879	92,495	77	1,060,156
1945	533,262	224,291	208,787	163,121	53,849	93,340	116	1,276,766
1946	758,466	311,499	293,892	159,115	86,660	94,592	38	1,704,262
1947	1,150,538	414,267	201,535	173,601	169,332	99,786	738	2,209,797
1948	1,473,289	524,350 2/	225,641	180,518 2/	237,638	92,941	2,424	2,736,801
1949	1,627,550	544,886	177,850	162,197	239,210	77,981	6,925	2,836,599

1/ Included in All Other.
2/ Revised.

TABLE 3. RELATIVE RANK OF THE PRINCIPAL USES OF LP-GAS
ON A PERCENTAGE BASIS

Year	Domestic	Chemical	Synthetic Rubber	Industrial	Gas Mfg.	Internal Combustion	All Other	Total
1940	42.7	11.1	-	22.3	6.5	17.2	0.2	100.0
1941	47.7	9.6	-	21.3	5.5	14.4	1.5	100.0
1942	51.2	9.1	-	19.5	5.3	14.1	0.8	100.0
1943	50.3	8.2	-	22.1	5.6	13.0	0.8	100.0
1944	42.0	14.4	15.3	15.3	4.3	8.7	1/	100.0
1945	41.8	17.6	16.3	12.8	4.2	7.3	1/	100.0
1946	44.5	18.3	17.2	9.3	5.1	5.6	1/	100.0
1947	52.1	18.7	9.1	7.9	7.7	4.5	1/	100.0
1948	53.8	19.1 2/	8.3	6.6 2/	8.7	3.4	0.1	100.0
1949	57.4	19.2	6.3	5.7	8.4	2.7	0.3	100.0

1/ Less than .05 percent.
2/ Revised.

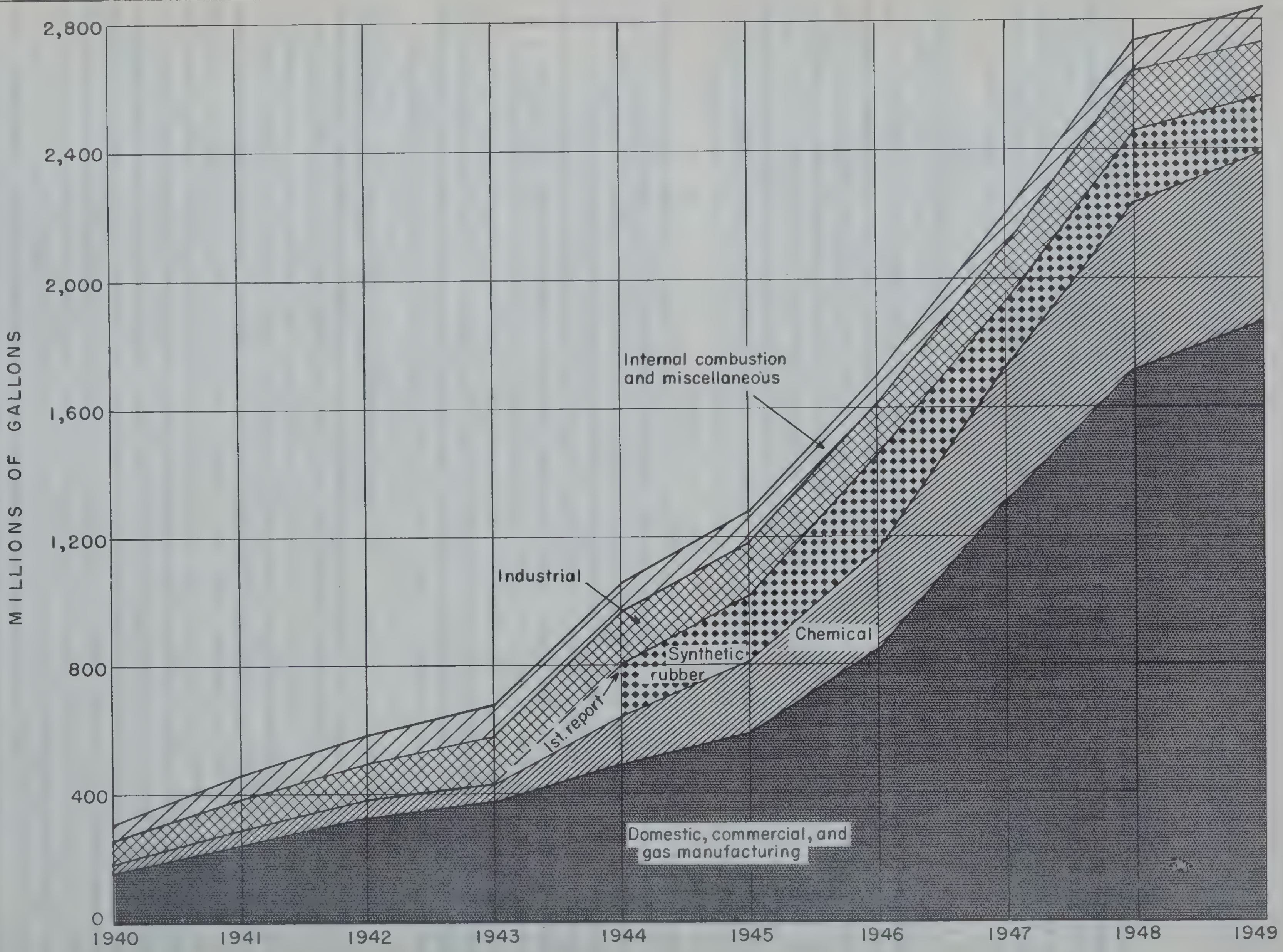

Figure I.- SALES OF LP-GAS BY PRINCIPAL USES.

The reporting of LP-gas sales by marketing districts, initiated in 1948 was repeated in 1949, so that a comparison of the demands in the several areas for the two years can now be made. Sales in District 3 increased slightly from 1,122,870,000 gallons in 1948 to 1,123,349,000 in 1949 and the quantities represented about 40 percent of the national total for both years. The market for LP-gas in District 2 rose by 9 percent from 788,142,000 gallons in 1948 to 855,816,000 in 1949 and the relative share for the area was 29 percent of total deliveries in 1948 and 30 percent in 1949. Distributors in District 1 reported about 17 percent of the LP-gas sales in both years and the volume rose by 8 percent from 454,555,000 gallons in 1948 to 491,753,000 in 1949. The only market to show a decline in sales was District 5, where requirements dropped from 325,307,000 gallons in 1948 (12 percent of all sales) to 312,014,000 in 1949 (11 percent of the national market). Less than 2 percent of the LP-gas is credited to District 4, however, sales in that area increased from 45,927,000 gallons in 1948 to 53,667,000 in 1949 - a gain of 17 percent.

DOMESTIC (HOUSEHOLD) AND COMMERCIAL USES.

Sales of LP-gas for domestic and commercial consumption did not show the large relative increase in 1949 as in recent years, when deliveries of 1,627,550,000 gallons were only 11 percent over the 1948 total of 1,473,289,000 gallons in contrast to gains of 28 percent in 1948 and about 50 percent in 1947. More than half (about 52 percent) of the LP-gas sold for domestic use is propane and the 1949 quantity of 854,456,000 gallons was about 12 percent over the 1948 total. Butane-propane mixtures are also widely used in some areas for domestic fuel, however the 1949 total of 618,495,000 gallons was only 4 percent above the 1948 demand and the proportionate share of the market dropped from 40 percent in 1948 to 38 percent in 1949. Relatively little butane is sold for household fuel purposes, however the quantity reported - 154,499,000 gallons - was about 37 percent over 1948 requirements.

There was very little change in the relative proportions of LP-gas sold for domestic fuel in the several marketing areas in 1949 compared with 1948. Sales reported for District 3 declined from about 37 percent of the national total in 1948 to 35 percent in 1949, while there were slight gains in District 1 and 2. District 2 was credited with 31 percent of all deliveries for domestic fuel in 1948 and 32 percent in 1949, while 17 percent of the total was reported for District 1, a small gain over 1948. Distributors in District 4 and 5 reported about 3 percent and 12 percent, respectively, of the domestic item for both years under review.

GAS-MANUFACTURING PLANT USE. -

There was little change in the quantity of LP-gas sold to gas-manufacturing plants for use as an enriching agent and for direct distribution through their mains in 1949, as the total of 239,210,000 gallons was less than one percent above 1948 requirements of 237,638,000 gallons. Propane sold for these purposes increased by 9 percent in 1949, while the butane total was lower by 3 percent and "mixtures" were down sharply - 20 percent - for the year. Propane delivered to manufactured gas companies represented 61 percent of their requirements in 1949 compared with a 56-percent share in 1948. The butane in the total declined from 27 percent in 1948 to 26 percent in 1949, while butane-propane mixtures shrank from 17 percent of the manufactured-gas company item in 1948 to 14 percent in 1949.

More than half (54 percent for both 1948 and 1949) of the LP-gases sold to manufactured-gas companies is reported for District 2, while an additional 30 percent is credited to District 1. About 12 percent of the national total is delivered to gas companies in the Pacific Coast area or District 5, while only relatively small amounts are used in other areas.

The American Gas Association has contributed the following review regarding the distribution of LP-gas by gas utilities in 1949: -

"As of June 1, 1950 liquefied petroleum gas was being delivered through mains in 446 communities in 40 states by 198 utilities. An average of 351,800 customers received liquefied petroleum gas from utilities during 1949, consuming a total of 10.4 billion cubic feet. This quantity is exclusive of 2.4 billion cubic feet of liquefied petroleum gas produced during peak or emergency periods by gas utilities normally distributing manufactured or natural gas, and is exclusive of an additonal 7.0 billion cubic feet regularly used by gas utilities instead of oil to enrich manufactured gases."

"Butane-air gas and propane-air gas with heating values ranging from 525 to 1,600 Btu. per cubic foot were supplied in 369 communities in 37 states as of June 1, 1950. Undiluted butane vapors or mixtures of butane and propane vapors were supplied to 13 communities in Arizona, California, and New Mexico. Undiluted propane gas was supplied in 64 communities in Connecticut, Iowa, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, South Carolina Virginia and Wisconsin."

INDUSTRIAL PLANT USE. - Liquefied petroleum gases sold to industrial plants for fuel and other uses declined from a revised total [1] of 180,518,000 gallons in 1948 to 162,197,000 in 1949 - a 10-percent shrinkage. The propane in the 1949 total - 99,736,000 gallons - was only about one percent below the 1948 quantity, but the butane - 43,343,000 gallons in 1949 - and the "mixtures" -19,118,000 gallons in 1949 - were 20 percent and 25 percent, respectively, under 1948 requirements. The propane share of the liquidfied petroleum gas sold to industrial plants increased from 56 percent of the total in 1948 to about 62 percent in 1949, while the butane was down from 30 percent of the 1948 item to 27 percent in 1949. "Mixtures" represented 14 percent of these deliveries in 1948 and only 12 percent in 1949.

The larger share of the LP-gas sold to industrial plants is reported from District 2 and the proportion for the area increased from 51 percent of the total in 1948 to 53 percent in 1949. Another 31 percent is credited to District 1, while only relative small amounts of this industrial fuel are delivered in the remaining areas, with the possible exception of District 5 where the demand dropped from 15 percent of the national total in 1948 to 10 percent in 1949.

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[1] A corrected company report for 1948 has made it necessary to shift part of the "Industrial Fuel" item for that year to "Raw Material for Chemical Plants".

SYNTHETIC RUBBER COMPONENTS - The sharp drop in the manufacture of synthetic rubber in 1949 is reflected in the lower demand for LP-gas used as raw material, as the tota of 177,850,000 gallons is about 21 percent below 1948 requirements of 225,641,000 gallons. Butane is mostly used to make synthetic rubber and the sales of this gas for the purpose declined by 20 percent from 194,777,000 gallons in 1948 to 156,607,000 in 1949. Relatively smaller amounts of "mixtures" - 26,739,000 gallons in 1948 and 19,863,000 in 1949 - and propane - 4,125,000 gallons in 1948 and 1,380,000 in 1949 - are also sold for the manufacture of synthetic rubber.

Over four-fifths of the LP-gas delivered for synthetic rubber components are reported from District 3, where most of the manufacturing plants are located. The other areas, except District 5, report comparative small quantities.

RAW MATERIAL AND SOLVENTS FOR CHEMICAL PLANTS. - Liquefied petroleum gas sold to chemical plants showed a nominal increase (4 percent) from a revised total 1/ of 524,350,000 gallons in 1948 to 544,886,000 - in 1949. About half the LP-gas delivered for chemical raw material is reported as propane, and the quantity increased by 6 percent from 261,327,000 gallons in 1948 to 277,045,000 in 1949. Butane-propane mixtures constituted over a third of the total (38 percent in 1948 and 39 percent in 1949) and deliveries of these to chemical plants were 211,365,000 gallons in 1949, a gain of 8 percent over the 1948 item of 196,571,000 gallons. Only relative small amounts of butane are used as chemical raw material and the demand declined from 66,452,000 gallons in 1948 to 56,476,000 in 1949.

Most of the chemical plants using LP-gas for raw material and solvents are located in District 3, and the quantities sold in that area represented 68 percent of the total for both 1948 and 1949. Relatively smaller amounts are credited to District 1 - 16 percent of the total in 1949 - and to District 2 - 10 percent of all such deliveries for the same year. Sales of LP-gas to chemical plants in District 5 dropped from 9 percent of the total in 1948 to 7 percent in 1949.

INTERNAL-COMBUSTION ENGINE FUEL. - Liquefied petroleum gas sold for engine fuel declined from 92,941,000 gallons in 1948 to 77,981,000 in 1949. It is believed that at least part of this large indicated shrinkage in demand is due to some over-reporting under this particular item in 1948. The quantities of butane and butane-propane mixtures sold for internal-combustion engine fuel both fell off in 1949, while the demand for propane showed a large increase. The butane reported in 1949 - 14,993,000 gallons was a quarter below the 1948 quantity of 20,019,000 gallons, while "mixtures" were down similarly from 58,790,000 gallons in 1948 to 42,724,000 in 1949. Propane used for engine fuel was greater in volume by nearly a half from 14,132,000 gallons in 1948 to 20,264,000 in 1949.

1/ See note bottom of page 5.

Approximately half of the LP-gas used for internal-combustion-engine fuel is reported from District 2 and sales that area were down by 10 percent. Deliveries in District 5 account for about a third of the demand and there the 1949 quantity was 22 percent below 1948 requirements. District 3 is a market for about one-fifth of this fuel and dealers there reported sales in 1949 a quarter under the 1948 item. Only minor quantities of LP-gases are sold for engine fuel in Districts 1 and 4.

PRICES. - Average monthly refinery prices for several grades of LP-gas at various cities are shown in Platts Oil Price Handbook for 1947 and 1948, however the quotations for all of 1949 are limited to New York and Philadelphia in the latest release of the above price manual. The average refinery prices published for 1949 all show pronounced declines from 1948 levels and approach values prevailing in 1947. The average refinery price for commercial propane at New York Harbor rose from 6.58 cents in 1947 to 9 cents in 1948 and was down to a 6.49 cent average in 1949. Commercial propane at Philadelphia ranged from an average of 6.56 cents a gallon in 1947 to 8.94 cents in 1948 and then down to an average of 6.44 cents in 1949.

EXPORTS. - Shipments of LP-gas to foreign countries, which declined in 1948, turned upwards again in 1949. The 1949 total of 53,383,000 gallons is 17 percent above the 1948 over-seas shipments of 45,520,000 and about equal to the 1947 item of 53,233,000 gallons. Canada and Mexico, received most of these exports as in former years.

E. T. Knudsen, Supervising Economist, U. S. Bureau of Mines, Los Angeles, California made the survey and compiled the sales statistics for District 5 as shown in this report.

TABLE 4. EXPORTS OF LIQUEFIED PETROLEUM GASES 1945-49
(Thousands of gallons) 1/

Countries of Destination	1945	1946	1947	1948	1949
Canada	15,044	30,379	31,591	26,681	31,195
Mexico	10,615	15,955	16,471	15,497	16,120
Bermuda	103	147	198	269	282
Cuba	-	-	59	259	463
Brazil	63	289	1,570	1,720	3,405
Argentina	7	40	8	290	546
United Kingdom	-	-	446	2/	2/
France	-	1,941	2,082	2/	2/
Philippines, Republic of the	12	101	402	568	894
All other countries	215	239	406	236	478
Total	26,059	49,091	53,233	45,520	53,383

1/ Converted from "pounds" to "gallons" at 4.5 pounds per gallon.
2/ Less than 500 gallons included in All other countries.

Source: Bureau of the Census, United States Department of the Commerce.

TABLE 5. Sales of Liquefied Petroleum Gases in 1948 and 1949.

(Thousands of Gallons)

78494

Principal Uses and Districts:	Butane		Propane		Butane and Propane Mixture		Total L P-Gas		Percent Changes
	1948	1949	1948	1949	1948	1949	1948	1949	1949 to 1948
Domestic and Commercial:									
District 1 - - - - - - -	17,159	19,927	193,515	223,146	35,670	39,173	246,344	282,246	14.6
District 2 - - - - - - -	22,419	44,149	317,068	359,194	119,667	124,129	459,154	527,472	14.9
District 3 - - - - - - -	58,986	73,823	138,250	142,168	351,852	354,730	549,098	570,721	3.9
District 4 - - - - - - -	7,595	13,895	28,643	29,463	4,325	6,244	40,563	49,602	22.3
District 5 - - - - - - -	6,842	2,805	88,467	100,485	82,821	94,219	178,130	197,509	10.9
Total - - - - - - -	113,001	154,599	765,953	854,456	594,335	618,495	1,473,289	1,627,550	10.5
Gas Manufacturing:									
District 1 - - - - - - -	20,521	18,656	45,156	47,681	3,906	4,790	69,583	71,127	2.2
District 2 - - - - - - -	36,445	37,421	69,890	74,265	20,990	16,278	127,325	127,964	0.5
District 3 - - - - - - -	2,206	1,730	1,802	3,099	3,775	3,456	7,783	8,285	6.4
District 4 - - - - - - -	2,588	1,353	—	310	1,243	955	3,831	2,618	-31.7
District 5 - - - - - - -	1,812	2,341	16,227	19,528	11,077	7,347	29,116	29,216	0.3
Total - - - - - - -	63,572	61,501	133,075	144,883	40,991	32,826	237,638	239,210	0.7
Industrial Plants:									
District 1 - - - - - - -	7,042	4,495	48,135	43,855	1,336	1,352	56,513	49,702	-12.1
District 2 - - - - - - -	43,414	35,404	40,095	45,120	8,785	5,300	92,294	85,824	- 7.0
District 3 - - - - - - -	1,286 1/	1,050	596 1/	1,524	1,510 1/	7,262	3,392 1/	9,836	190.0
District 4 - - - - - - -	—	1,147	1,033	174	—	—	1,033	1,321	27.9
District 5 - - - - - - -	2,678	1,247	10,757	9,063	13,851	5,204	27,286	15,514	-43.1
Total - - - - - - -	54,420 1/	43,343	100,616 1/	99,736	25,482 1/	19,118	180,518 1/	162,197	-10.1
Synthetic Rubber:									
District 1 - - - - - - -	563	121	870	—	—	7	1,433	128	-91.1
District 2 - - - - - - -	19,311	21,816	1,267	—	2	1	20,580	21,817	6.0
District 3 - - - - - - -	159,197	124,496	785	—	26,737	19,855	186,719	144,351	-22.7
District 4 - - - - - - -	—	—	—	—	—	—	—	—	
District 5 - - - - - - -	15,706	10,174	1,203	1,380	—	—	16,909	11,554	-31.7
Total - - - - - - -	194,777	156,607	4,125	1,380	26,739	19,863	225,641	177,850	-21.2
Chemical Plants:									
District 1 - - - - - - -	178	1,780	4,915	388	74,873	84,599	79,966	86,767	8.5
District 2 - - - - - - -	—	—	785	5,109	44,706	46,745	45,491	51,854	14.0
District 3 - - - - - - -	56,071 1/	46,983	220,930 1/	243,571	76,992 1/	80,021	353,993 1/	370,575	4.7
District 4 - - - - - - -	—	—	—	—	—	—	—	—	
District 5 - - - - - - -	10,203	7,713	34,697	27,977	—	—	44,900	35,690	-20.5
Total - - - - - - -	66,452 1/	56,476	261,327 1/	277,045	196,571 1/	211,365	524,350 1/	544,886	3.9
Internal Combustion:									
District 1 - - - - - - -	380	—	52	24	—	1,633	432	1,657	283.6
District 2 - - - - - - -	16,491	10,958	7,514	9,999	18,754	17,338	42,759	38,295	-10.4
District 3 - - - - - - -	49	1,878	1,004	2,443	19,231	11,051	20,284	15,372	-24.2
District 4 - - - - - - -	6	5	41	115	453	6	500	126	-74.8
District 5 - - - - - - -	3,093	2,152	5,521	7,683	20,352	12,696	28,966	22,531	-22.2
Total - - - - - - -	20,019	14,993	14,132	20,264	58,790	42,724	92,941	77,981	-16.1
All Other:									
District 1 - - - - - - -	1	1	283	123	—	2	284	126	-55.6
District 2 - - - - - - -	54	1,252	232	1,326	253	12	539	2,590	380.5
District 3 - - - - - - -	319	29	1	4,146	1,281	34	1,601	4,209	162.1
District 4 - - - - - - -	—	—	—	—	—	—	—	—	
District 5 - - - - - - -	—	—	—	—	—	—	—	—	
Total - - - - - - -	374	1,282	516	5,595	1,534	48	2,424	6,925	185.7
Total All Uses:									
District 1 - - - - - - -	45,844	44,980	292,926	315,217	115,785	131,556	454,555	491,753	8.2
District 2 - - - - - - -	138,134	151,000	436,851	495,013	213,157	209,803	788,142	855,816	8.6
District 3 - - - - - - -	278,114	249,989	363,378	396,951	481,378	476,409	1,122,870	1,123,349	2/
District 4 - - - - - - -	10,189	16,400	29,717	30,062	6,021	7,205	45,927	53,667	16.9
District 5 - - - - - - -	40,334	26,432	156,872	166,116	128,101	119,466	325,307	312,014	-4.1
Total U.S. Sales - -	512,615	488,801	1,279,744	1,403,359	944,442	944,439	2,736,801	2,836,599	3.6
Exports - - - - - - —							45,520	53,383	17.3
Grand Total Sales- -							2,782,321	2,889,982	3.9

1/ Revised.

2/ Less than .05 percent increase.

TABLE 6. PERCENTAGE OF SALES OF LP-GAS BY DISTRICTS FOR PRINCIPAL USES

Principal Uses	Districts					Total	
	1	2	3	4	5	1949	1948 1/
Butane	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Domestic	44.3	29.2	29.5	84.7	10.6	31.6	22.0
Gas-Manufacturing	41.5	24.8	0.7	8.3	8.9	12.6	12.4
Industrial Plants	10.0	23.4	0.4	7.0	4.7	8.9	10.6
Synthetic Rubber	0.3	14.5	49.8	-	38.5	32.0	38.0
Chemical	3.9	-	18.8	-	29.2	11.6	13.0
Internal Combustion	-	7.3	0.8	2/	8.1	3.1	3.9
All Other Uses	2/	0.8	2/	-	-	0.2	0.1
Propane	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Domestic	70.8	72.6	35.8	98.0	60.5	60.9	59.9
Gas-Manufacturing	15.1	15.0	0.8	1.0	11.8	10.3	10.4
Industrial Plants	13.9	9.1	0.4	0.6	5.5	7.1	7.9
Synthetic Rubber	-	-	-	-	0.8	0.1	0.3
Chemical	0.1	1.0	61.4	-	16.8	19.8	20.4
Internal Combustion	2/	2.0	0.6	0.4	4.6	1.4	1.1
All Other Uses	0.1	0.3	1.0	-	-	0.4	2/
Butane-Propane Mixture	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Domestic	29.8	59.2	74.5	86.7	78.9	65.5	62.9
Gas-Manufacturing	3.7	7.7	0.7	13.3	6.1	3.5	4.4
Industrial Plants	1.0	2.5	1.5	-	4.4	2.0	2.7
Synthetic Rubber	2/	2/	4.2	-	-	2.1	2.8
Chemical	64.3	22.3	16.8	-	-	22.4	20.8
Internal Combustion	1.2	8.3	2.3	2/	10.6	4.5	6.2
All Other Uses	2/	2/	2/	-	-	2/	0.2
Total LP-Gas	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Domestic	57.4	61.6	50.8	92.4	63.3	57.4	53.8
Gas-Manufacturing	14.5	15.0	.7	4.9	9.3	8.4	8.7
Industrial Plants	10.1	10.0	.9	2.5	5.0	5.7	7.8
Synthetic Rubber	2/	2.5	12.8	-	3.7	6.3	8.3
Chemical	17.7	6.1	33.0	-	11.5	19.2	17.9
Internal Combustion	0.3	4.5	1.4	0.2	7.2	2.8	3.4
All Other Uses	2/	0.3	0.4	-	-	0.2	0.1

1/ Revised.

2/ Less than .05 percent.

TABLE 7. PROPORTION OF SALES OF LP-GAS IN DISTRICTS FOR PRINCIPAL USES

Principal Uses	Districts					Total
	1	2	3	4	5	
Butane	9.2	30.9	51.1	3.4	5.4	100.0
Domestic	12.9	28.6	47.7	9.0	1.8	100.0
Gas-Manufacturing	30.3	60.9	2.8	2.2	3.8	100.0
Industrial Plants	10.4	81.7	2.4	2.6	2.9	100.0
Synthetic Rubber	0.1	13.9	79.5	-	6.5	100.0
Chemical	3.2	-	83.2	-	13.6	100.0
Internal Combustion	-	73.1	12.5	1/	14.4	100.0
All Other Uses	0.1	97.7	2.2	-	-	100.0
Propane	22.5	35.3	28.3	2.1	11.8	100.0
Domestic	26.1	42.0	16.6	3.5	11.8	100.0
Gas-Manufacturing	32.9	51.3	2.1	0.2	13.5	100.0
Industrial Plants	44.0	45.2	1.5	0.2	9.1	100.0
Synthetic Rubber	-	-	-	-	100.0	100.0
Chemical	0.1	1.9	87.9	-	10.1	100.0
Internal Combustion	0.1	49.3	12.1	0.6	37.9	100.0
All Other Uses	2.2	23.7	74.1	-	-	100.0
Butane-Propane Mixture	13.9	22.2	50.4	0.8	12.7	100.0
Domestic	6.3	20.1	57.4	1.0	15.2	100.0
Gas-Manufacturing	14.6	49.6	10.5	2.9	22.4	100.0
Industrial Plants	7.1	27.7	38.0	-	27.2	100.0
Synthetic Rubber	1/	1/	100.0	-	-	100.0
Chemical	40.0	22.1	-	37.9	-	100.0
Internal Combustion	3.8	40.6	25.9	1/	29.7	100.0
All Other Uses	4.2	25.0	70.8	-	-	100.0
Total LP-Gas	17.3	30.0	39.8	1.9	11.0	100.0
Domestic	17.4	32.4	35.1	3.0	12.1	100.0
Gas-Manufacturing	29.7	53.5	3.5	1.1	12.2	100.0
Industrial Plants	30.6	52.9	6.1	0.8	9.6	100.0
Synthetic Rubber	0.1	12.3	81.1	-	6.5	100.0
Chemical	15.9	9.5	68.0	-	6.6	100.0
Internal Combustion	2.1	49.1	19.7	0.2	28.9	100.0
All Other Uses	1.8	37.4	60.8	-	-	100.0

1/ Less than 0.5 percent.

TABLE 8. PERCENTAGE OF DIFFERENT LP-GASES BY DISTRICTS AND PRINCIPAL USES 1948 AND 1949

Principal Uses and Districts	Butane		Propane		Butane and Propane Mixture		
	1948	1949	1948	1949	1948	1949	Total
Domestic and Commercial:							
District 1	7.0	7.1	78.5	79.0	14.5	13.9	100.0
District 2	4.9	8.4	69.0	68.1	26.1	23.5	100.0
District 3	10.7	12.9	25.2	24.9	64.1	62.2	100.0
District 4	18.7	28.0	70.6	59.4	10.7	12.6	100.0
District 5	3.8	1.4	49.7	50.9	46.5	47.7	100.0
Total	7.7	9.5	52.0	52.5	40.3	38.0	100.0
Gas Manufacturing:							
District 1	29.5	26.2	64.9	67.0	5.6	6.8	100.0
District 2	28.6	29.3	54.9	58.0	16.5	12.7	100.0
District 3	28.3	20.9	23.2	37.4	48.5	41.7	100.0
District 4	67.6	51.7	-	11.8	32.4	36.5	100.0
District 5	6.2	8.0	55.7	66.8	38.1	25.2	100.0
Total	26.8	25.7	56.0	60.6	17.2	13.7	100.0
Industrial Plants:							
District 1	12.4	9.1	85.2	88.2	2.4	2.7	100.0
District 2	47.0	41.2	43.5	52.6	9.5	6.2	100.0
District 3	37.9	10.7	17.6	15.5	44.5	73.8	100.0
District 4	-	86.8	100.0	13.2	-	-	100.0
District 5	9.8	8.0	39.4	58.4	50.8	33.6	100.0
Total	30.2	26.7	55.7	61.5	14.1	11.8	100.0
Synthetic Rubber:							
District 1	39.3	94.5	60.7	-	-	5.5	100.0
District 2	93.8	100.0	6.2	-	1/	1/	100.0
District 3	85.3	86.2	.4	-	14.3	13.8	100.0
District 4	-	-	-	-	-	-	-
District 5	92.9	88.1	7.1	-	-	11.9	100.0
Total	86.3	88.1	1.8	.8	11.9	11.1	100.0
Chemical Plants:							
District 1	.2	2.1	6.2	.4	93.6	97.5	100.0
District 2	-	-	1.7	9.9	98.3	90.1	100.0
District 3	15.8	12.7	62.4	65.7	21.8	21.6	100.0
District 4	-	-	-	-	-	-	-
District 5	22.7	21.6	77.3	78.4	-	-	100.0
Total	12.7	10.4	49.8	50.8	37.5	38.8	100.0
Internal Combustion:							
District 1	88.0	-	12.0	1.4	-	98.6	100.0
District 2	38.6	28.6	17.6	26.1	43.8	45.3	100.0
District 3	.2	12.2	5.0	15.9	94.8	71.9	100.0
District 4	1.2	3.9	8.2	91.3	90.6	4.8	100.0
District 5	10.7	9.6	19.1	34.1	70.2	56.3	100.0
Total	21.5	19.2	15.2	26.0	63.3	54.8	100.0
All Other:							
District 1	.4	.8	99.6	97.6	-	1.6	100.0
District 2	10.0	48.3	43.1	51.2	46.9	.5	100.0
District 3	19.9	.7	.1	98.5	80.0	.8	100.0
District 4	-	-	-	-	-	-	-
District 5	-	-	-	-	-	-	-
Total	15.4	18.5	21.3	80.8	63.3	.7	100.0
Total All Uses:							
District 1	10.1	9.1	64.4	64.1	25.5	26.8	100.0
District 2	17.5	17.7	55.4	57.8	27.1	24.5	100.0
District 3	24.8	22.3	32.3	35.3	42.9	42.4	100.0
District 4	22.2	30.6	64.7	56.0	13.1	13.4	100.0
District 5	12.4	8.5	48.2	53.2	39.4	38.3	100.0
Total	18.7	17.2	46.8	49.5	34.5	33.3	100.0

1/ Less than .05 percent

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES A. BOYD, Director

FOR RELEASE JULY 5, 1950

MINERAL MARKET REPORT
MMS NO. 1883

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

MINERAL PRODUCTION IN ALASKA, 1949 - FINAL ANNUAL FIGURES

Despite a decline for the second consecutive year gold continued to rank first among mineral commodities in value, according to the Juneau Office of the Bureau of Mines, United States Department of the Interior. Notwithstanding this decline the total value of mineral output in the Territory rose to $15,299,000 in 1949 compared with $13,026,000 in 1948. Coal ranked second to

Mineral production of Alaska 1948-49

	1948		1949	
	Quantity	Value	Quantity	Value
Antimony ore............short tons..	68	$29,336	74	$30,984
Coal, bituminous............do......	407,906	2,789,275	455,000	(1)
Copper.......................do......	16	6,944	4	1,576
Gold..................troy ounces..	248,395	8,693,825	229,416	8,029,560
Lead....................short tons..	329	117,782	51	16,116
Mercury.....flasks.....(76 pounds)..	100	7,649	100	7,946
Platinum metals (crude)..troy ounces	(1)	(1)	(1)	(1)
Silver.......................do......	67,341	60,947	36,056	32,633
Stone...................short tons..	40,730	54,637	(1)	(1)
Tin 2/...................long tons..	6	(1)	51	(1)
Zinc....................short tons..	22	5,852	2	496
Miscellaneous 3/....................	-	1,260,112	-	7,179,791
Total.........................	-	13,026,000	-	15,299,000

1/ Bureau of Mines not at liberty to publish separately: Value included with "Miscellaneous".
2/ Shipments.
3/ Comprises value of sand and gravel, clay (1948), pumice (1947 and 1948), and items indicated by "(1)".

Prepared by Alfred L. Ransome, Juneau Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

gold in value of output, and platinum mining continued to be an important factor in the mineral industry with production of crude platinum-group metals exceeding that of the previous year. The output of lead was only one-sixth of the 1948 production, and silver, copper, and zinc - each a byproduct from an operation conducted primarily for another metal - was one-half, one-fourth, and one-tenth, respectively, of the 1948 production. Output of tin was small but substantially above the 1948 level.

GOLD, SILVER, COPPER, LEAD, AND ZINC

The Alaska production in 1949 (in terms of recoverable metal) was 229,416 fine ounces of gold valued at $8,029,560 (compared with 248,395 ounces valued at $8,693,825 in 1948); 36,056 ounces of silver valued at $32,633 (67,341 ounces at $60,947 in 1948); 4 short tons of copper valued at $1,576 (16 tons at $6,944 in 1948); 51 tons of lead valued at $16,116 (329 tons at $117,782 in 1948); and 2 tons of zinc valued at $496 (22 tons at $5,852 in 1948). The total value of the output of the five metals was $8,080,381 compared with $8,885,350 in 1948.

Average metal prices used in 1949 (1948 prices in parentheses) were: Gold $35 per fine ounce ($35); silver, $0.9050505 per fine ounce ($0.9050505); copper, $0.197 a pound ($0.217); lead, $0.158 a pound ($0.179); and zinc, $0.124 a pound ($0.133).

Gold. - The recorded production of 229,416 fine ounces of gold in Alaska in 1949 was 8 percent below the output in 1948. Only a few new operators have entered the field of gold mining, less than the number of previously established operators who either did not mine or sharply curtailed operations during 1949. One major exception was the resumption of activity by the Alaska-Pacific Consolidated Mining Co. at its Independence lode gold mine, Willow Creek district, Cook Inlet-Susitna region, for the first time since 1946. The sale of unprocessed or "natural" gold by a number of operators who hoped to gain by open market transactions at prices in excess of $35 per fine ounce apparently was greater in volume than in 1948. However, although some undoubtedly did benefit, others reported that the cost of handling such transactions was sufficiently high more or less to offset any advantage gained by a higher price, and that over-all results of natural gold sales during 1949 were disappointing. Included with the recorded production of 1949 are 9,836 fine ounces of gold contained in natural gold sold specifically reported by 10 producers as having been sold on the open market. In addition 8,656 ounces of natural gold bullion was reported sold, but the quantity is not included statistically because of insufficient data. Available information indicated that an undetermined quantity of natural gold (estimated to be 5,000 ounces) was sold by producers who did not report specifically. Although these data are incomplete it can be assumed that approximately 22,000 ounces of natural gold bullion originating from Alaska mines in 1949 were sold. A comparable total of 18,000 ounces was estimated for 1948.

Two less bucket-line dredges (28 in 1949; 30 in 1948) recovered nearly 71 percent of the total placer gold; nonfloating washing plants (dragline-bulldozer-hydraulic combinations by which gravel is mechanically handled) accounted for 27 percent, and hydraulicking 2 percent; no dragline dredges (dragline excavator with floating washing plant) were operated in 1949. In all, 96 percent of the total Alaska gold output in 1949 came from 222 placer mines. Four percent of the total Alaska gold output came from 18 lode mines (including mill cleanups and tailing retreatment at inactive properties); 97 percent of the ore and old tailing was gold ore, the balance was lead ore. Most of the gold came from a relatively few mines; the leading five producers (all placer), listed in order of output, supplied 57 percent of the Alaska total: United States Smelting, Refining & Mining Co., Fairbanks Unit, Fairbanks district (bucket-line dredges); United States Smelting, Refining & Mining Co., Nome Unit, Nome district, (bucket-line dredges); New York-Alaska Gold Dredging Corp., Tuluksak-Aniak district (bucket-line dredges); Brinker-Johnson Co., Fairbanks district (bucket-line dredge); and Strandberg & Sons, Hughes district (nonfloating washing plant).

Mine production of gold, silver, copper, lead, and zinc in Alaska in 1949, by months, in terms of recovered metals

Month 1/	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	–	–	–	–	–
February	19	7	–	–	–
March	30	4	–	–	–
April	654	300	–	–	–
May	10,302	1,488	–	2	(2)
June	21,858	3,279	–	1	(2)
July	24,253	3,457	–	–	–
August	37,730	5,667	–	–	–
September	34,387	5,833	–	22	(2)
October	59,101	9,508	2	15	(2)
November	21,190	3,534	2	11	(2)
December	19,892	2,979	–	–	–
Total: 1949	229,416	36,056	4	51	2
1948	248,395	67,341	16	329	22

1/ Based on mint and smelter receipts; data are adjusted to exclude receipts during the first part of 1949 previously credited to 1948 production, and to include receipts in 1950 which were produced in 1949.

2/ Less than one-half ton.

Mine production of gold, silver, copper, lead, and zinc in Alaska in 1949, by regions, in terms of recovered metals

Region	Mines producing 1/		Gold			Total silver (fine ounces)	Total value
	Lode	Placer	Lode (fine ounces)	Placer (fine ounces)	Total (fine ounces)		
Cook Inlet-Susitna	4	15	5,071	2,258	7,329	646	$257,100
Copper River	1	4	4	114	118	20	4,148
Kenai Peninsula	2	–	127	–	127	34	4,476
Kodiak Island	1	–	1	–	1	1	36
Kuskokwim	–	6	–	11,626	11,626	921	407,744
Seward Peninsula and Northwestern Alaska 2/	–	63	–	56,028	56,028	6,285	1,966,668
Southeastern Alaska	7	1	2,917	8	2,925	4,749	3/ 124,861
Yukon River Basin	3	133	207	151,055	151,262	23,400	5,315,348
Total: 1949	18	222	8,327	221,089	229,416	36,056	3/8,080,381
1948	24	274	5,593	242,802	248,395	67,341	4/8,885,350

1/ Excludes itinerant prospectors, snipers, highgraders, and others who gave no evidence of legal right to property. 2/ Combined to avoid disclosure of individual output. 3/ Includes value of 4 tons of copper ($1,576), 51 tons of lead ($16,116), and 2 tons of zinc ($496). 4/ Includes value of 16 tons of copper ($6,944), 329 tons of lead ($117,782), and 22 tons of zinc ($5,582).

Silver. - Of the silver produced in Alaska in 1949, 90 percent was a byproduct of gold mining, and 10 percent came from lead ore. The most important producer of silver in 1949 was the United States Smelting, Refining & Mining Co., (Fairbanks Unit), which recovered silver as a byproduct of bucket-line dredging operations in the Fairbanks district.

Copper, Lead, and Zinc. - Production of the base metals (copper, lead, and zinc) was limited almost entirely to output from one mine, the Riverside, near Hyder in Southeastern Alaska. A relatively small output of these metals came from several other properties in the same region as a byproduct recovery from ore and old tailing treated primarily for the recovery of gold.

OTHER MINERALS

Antimony. - Earl Pilgrim operated the Stampede mine in the Kantishna district and was the only producer reporting shipments of antimony ore or concentrates from Alaska in 1949. Shipments were 74 tons of concentrate containing 87,780 pounds of antimony.

Coal. - Alaska produced 455,000 short tons (preliminary figure) of bituminous coal and lignite in 1949, 12 percent more than in 1948, but owing to a lower unit price the value increased only 10 percent. The largest proportion of the output, as heretofore, came from one mine in the Matanuska Valley field and three mines in the Nenana field.

Mercury. - Underground activity at the Decoursey Mountain mine, 24 miles from Crooked Creek, was stopped in August 1948, but placer operations there yielded 100 flasks of mercury in 1949.

Platinum Metals. - Placer deposits in the Goodnews Bay district, Kuskokwim region, continued to yield a substantial quantity of crude platinum metals; the output - entirely from the bucket-line dredging operation of the Goodnews Bay Mining Co. - was higher than in 1948.

Tin. - The Northern Tin Co., Inc. shipped 42 long tons of placer tin concentrate, containing 29 long tons of tin, recovered from its Buck Creek operation; and the U. S. Tin Corporation, active at its property on Lost River, reported the shipment from Alaska of 38 long tons of placer tin-tungsten concentrate, containing 21 long tons of tin. Both operations are in the Port Clarence district, Seward Peninsula region.

Miscellaneous Minerals. - Although limestone was shipped from Alaska in 1949, sand and gravel was produced, and a small quantity of tungsten produced as a byproduct of ore mined chiefly for its lead content, no figures on output can be published. There was no recorded production of asbestos, chromite, gem stones, or petroleum in Alaska in 1949.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE JULY 6, 1950.
MINERAL MARKET REPORT
MMS NO. 1884

PHOSPHATE ROCK INDUSTRY OF FLORIDA IN 1949

Florida in 1949 was by far the leading phosphate-rock producing State of the United States, its marketed production being several times that of the State in second position - Tennessee. The upward trend in the Florida phosphate rock sold or used continued in 1949, and a new high record was made - 6,815,989 long tons - according to reports of the producers to the Bureau of Mines, United States Department of the Interior. The value was likewise at a new high - $37,857,983. The greater part of the production came from the land-pebble field, with relatively small quantities of hard rock and soft rock being produced.

The land-pebble phosphate-rock mining companies that produced in 1949 were the American Agricultural Chemical Co. (Pierce); American Cyanamid Co. (Brewster); Coronet Phosphate Co. (Plant City); Davison Chemical Corp. (Ridgewood); International Minerals & Chemical Corp. (Mulberry); Swift & Co. (Agricola); and the Virginia - Carolina Chemical Corp. (Nichols). The Pembroke Chemical Corp. (Pembroke) did no mining in 1949 but made some shipments of phosphate rock. The Armour Fertilizer Works was not yet in production.

The American Agricultural Chemical Corp. operated its Nos. 3, 11, and 12 mines and washers, its tabling plant, and its drier at Pierce. The American Cyanamid Co. reported its Saddle Creek and Sidney mines and washers in operation, feeding to the Brewster drier. A new flotation plant was started by the company at Sidney, between Mulberry and Tampa. The Coronet Phosphate Co. recovered phosphate rock at its Eleanor mine, washer, and flotation unit, drying the phosphate rock produced at its Coronet drier. Davison Chemical Corp. produced phosphate rock at its Bonny Lake and Pauway No. 4 mines and washers and dried the washed rock at its Ridgewood drying plant. In January 1949 this company placed in operation a new phosphate flotation plant as an adjunct to the Pauway No. 4 washer. The International Minerals & Chemical Corp. operated its Noralyn, Peace Valley, and Achan mines and washers, and its Noralyn and Prairie driers in 1949. The Achan mine and washer were in operation only during the last five months of the year. During the year ended June 30, 1949, new drying, storage, and shipping facilities were installed at the Noralyn mine. The tonnage shipped by the company in March, 1949, was the highest of any month in its history. A strike, seven weeks in length, in May and June 1949, stopped all operations of the company. Swift & Co. operated its Swift No. 5 and Swift No. 6 mines and washers, drying the phosphate rock produced at its Agricola plant. Triple superphosphate is reported as being produced at its new Agricola facilities. The Virginia - Carolina Chemical Corp. operated

Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

its Homine mine and washer, and mined feed from the Phosmico debris dumps. The phosphate rock was dried at the Phosmico and Nichols driers. Some was calcined.

In the hard-rock phosphate field C. & J. Camp, and J. Buttgenbach & Co., who had operated the Section 12 mine near Dunnellon jointly in recent years, were succeeded on January 1, 1949, by the Kibler-Camp Phosphate Enterprise (P. O. Box 608, Ocala, Fla.), now the only hard-rock phosphate operation in Florida. Operations were continued at the Section 12 mine, and shipments were made both for domestic consumption and for export.

Several soft-rock phosphate mining companies were in operation in 1949, mining the fine-grained phosphatic residues in the old waste ponds near Dunnellon, Hernando and Loncala, in the hard-rock phosphate field. Part of this material was sold for use as a phosphatic fertilizer for direct application to the soil, part for use as a filler in commercial mixed or complete fertilizers, and part for stock and poultry feed.

Florida phosphate rock sold or used by producers, 1945-49, by kinds

Year	Hard rock			Soft rock 1/		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1945.........	63,491	$426,061	$6.71	71,715	$293,433	$4.09
1946.........	100,881	762,127	7.55	97,067	387,708	3.99
1947.........	79,330	618,330	7.79	88,620	326,064	3.68
1948.........	48,198	368,586	7.65	69,335	293,927	4.24
1949.........	23,804	173,211	7.28	77,088	344,787	4.47

Year	Land pebble			Total		
	Long tons	Value at mines		Long tons	Value at mines	
		Total	Average		Total	Average
1945.........	4,103,022	$15,578,980	$3.80	4,238,228	$16,298,474	$3.85
1946.........	4,807,563	19,867,339	4.13	5,005,511	21,017,174	4.20
1947.........	6,314,077	31,975,858	5.06	6,482,027	32,920,252	5.08
1948.........	6,421,725	37,070,381	5.77	6,539,258	37,732,894	5.77
1949.........	6,715,097	37,339,985	5.56	6,815,989	37,857,983	5.55

1/ Includes material from waste pond operations.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

Mineral Market Report
M. M. S. No. 1885

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FOUNDRY CONSUMPTION OF BRASS INGOT IN 1949

Reported consumption of brass ingot in 1949 totaled 165,024 short tons compared with 229,620 tons in 1948, according to the Bureau of Mines, United States Department of the Interior. Brass and aluminum foundries were the principal consumers. These foundries and a few miscellaneous manufacturers like electrotype plants, not classified separately, used 162,188 tons of the total. Brass and wire mills used 2,836 tons and 794 tons were exported in 1949 compared with 4,322 tons and 424 tons respectively in 1948. Producers shipped 204,969 tons of brass ingot in 1949 and 302,910 tons in 1948. On the assumption that shipments equal domestic consumption plus exports this consumption survey achieved 81 percent coverage in 1949 compared with 76 percent in 1948. Over 3,300 plants were canvassed each year.

In the following table the ingot consumption has been classified under nine general types, and by States combined in 9 groups according to the customary practice in the Minerals Yearbook. As in 1948 the group containing Ohio and Illinois consumed more than any other group, 74,412 tons, and Ohio more than any other state, 26,090 tons. The group using the next largest total, 42,643 tons, was the Middle Atlantic in which the New York metropolitan area lies. These two groups together consumed 72 percent of the total quantity used by foundries. Consumption of composition ingot, the largest item amounted to 93,907 tons or 58 percent of the total.

Prepared by Helena M. Meyer and Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

FOUNDRY CONSUMPTION OF BRASS INGOT IN 1949 BY STATES
In short tons

States	Tin Bronze	Leaded Tin Bronze	Leaded Red Brass	High Leaded Tin Bronze	Leaded Yellow Brass	Manganese Bronze	Hard-eners	Nickel Silver	Low Brass	Total
New England										
Connecticut	154	2,225	2,410	440	1,421	55	22	7	94	6,828
Maine	18	2	152	88	–	32	2	–	20	314
Massachusetts	636	1,410	3,657	857	400	261	4	252	236	7,713
New Hampshire	117	89	636	63	378	44	1	–	1	1,329
Rhode Island	65	161	410	31	27	3	2	–	17	716
Vermont	–	–	57	2	–	–	–	–	–	59
Total	990	3,887	7,322	1,481	2,226	395	31	259	368	16,959
Middle Atlantic										
New Jersey	142	987	3,058	66	488	162	7	7	15	4,932
New York	962	2,460	7,028	960	252	902	70	273	314	13,221
Pennsylvania	2,241	2,608	13,337	1,672	1,389	1,644	866	92	641	24,490
Total	3,345	6,055	23,423	2,698	2,129	2,708	943	372	970	42,643
East North Central										
Illinois	986	2,905	12,478	508	407	767	181	192	533	18,957
Indiana	75	140	4,654	595	148	133	271	56	33	6,105
Michigan	223	1,707	9,262	621	1,203	597	60	1	60	13,734
Ohio	1,558	5,881	14,956	1,883	818	492	62	44	396	26,090
Wisconsin	265	1,002	4,395	1,173	2,198	218	17	198	60	9,526
Total	3,107	11,635	45,745	4,780	4,774	2,207	591	491	1,082	74,412
West North Central										
Iowa	186	69	704	54	466	160	–	–	–	1,639
Kansas	3	44	75	1	99	1	1	–	–	224
Minnesota	53	355	1,487	52	243	41	3	–	19	2,253
Missouri	160	252	1,440	5	883	48	49	1	384	3,222
Nebraska	–	52	145	–	–	1	3	–	–	201
Total	402	772	3,851	112	1,691	251	56	1	403	7,539

States	Tin Bronze	Leaded Tin Bronze	Leaded Red Brass	High Leaded Tin Bronze	Leaded Yellow Brass	Manganese Bronze	Hard-eners	Nickel Silver	Low Brass	Total
South Atlantic										
Delaware	22	–	86	–	–	1	–	–	3	112
Dist. of Columbia	–	–	–	–	–	2	9	–	–	11
Florida	–	1	39	1	–	2	–	–	–	43
Georgia	3	210	93	1	–	–	–	–	1	308
Maryland	35	130	349	40	5	40	9	–	21	629
North Carolina	–	15	14	–	144	–	–	–	–	173
South Carolina	–	–	4	–	–	–	–	–	–	4
Virginia	29	403	67	48	70	45	18	–	–	680
West Virginia	64	3	248	11	205	2	–	–	56	589
Total	153	762	900	101	424	92	36	–	81	2,549
East South Central										
Alabama	46	34	2,785	1	221	328	15	16	–	3,446
Kentucky	3	45	178	4	26	1	3	–	–	260
Mississippi	7	–	12	–	–	–	–	–	–	19
Tennessee	293	219	410	32	63	23	3	2	–	1,045
Total	349	298	3,385	37	310	352	21	18	–	4,770
West South Central										
Arkansas	3	–	4	–	–	–	–	–	–	7
Louisiana	17	12	40	8	–	5	–	–	9	91
Oklahoma	54	376	72	16	–	5	1	–	–	524
Texas	150	90	664	98	2	156	1	–	38	1,199
Total	224	478	780	122	2	166	2	–	47	1,821
Mountain										
Arizona	–	8	12	–	–	–	–	–	–	20
Colorado	52	24	29	8	–	2	–	–	4	119
Idaho	–	–	7	–	–	–	–	–	–	7
Montana	–	–	–	–	–	–	3	–	–	3
Utah	25	10	2	–	–	2	–	–	–	39
Total	77	42	50	8	–	4	3	–	4	188
Pacific										
California	302	637	8,398	487	127	642	17	6	353	10,969
Oregon	75	26	34	2	11	21	–	–	–	169
Washington	24	38	19	5	6	75	2	–	–	169
Total	401	701	8,451	494	144	738	19	6	353	11,307
Grand Total	9,048	24,630	93,907	9,833	11,700	6,913	1,702	1,147	3,308	162,188

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE, JULY 7, 1950.

MINERAL MARKET REPORT
MMS NO. 1886

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

METAL MINING IN ARIZONA, 1949 - FINAL ANNUAL FIGURES

Copper - the principal metal mined in Arizona - decreased from 750,242,000 pounds in 1948 to 718,020,000 pounds in 1949, a 4-percent loss, according to the Salt Lake City Office of the Bureau of Mines, United States Department of the Interior. However, the State made a record production of both lead and zinc in 1949, and production of silver was the greatest since 1943; the yield of gold declined slightly. Lead increased from 59,798,000 pounds in 1948 to 67,136,000 in 1949, a 12-percent gain; zinc from 108,956,000 pounds to 141,316,000, a 30-percent gain; and silver from 4,837,740 fine ounces to 4,970,736, a 3-percent gain; gold declined from 109,487 fine ounces to 108,993. The State remained the largest producer of copper in the United States, ranked second in zinc, and fourth in lead and silver; and again ranked first in total value of the five metals. The total value of the five metals was $177,894,134 in 1949 compared with $196,207,948 in 1948, a 9-percent loss. The value of the gold output was 2 percent of the total value; silver, 3 percent; copper, 79 percent; lead, 6 percent; and zinc, 10 percent. The value of the metals recovered from copper ore was $143,441,196 in 1949 ($166,494,997 in 1948) or 81 percent of the State total.

In 1949, 68 percent of Arizona's gold production and 44 percent of its silver were recovered from copper ore mined in the Warren (Bisbee), Ajo, Verde (Jerome), Pioneer (Superior), and Copper Mountain (Morenci) districts. The rest of the gold came largely from zinc-lead ore from two properties in the Big Bug and Warren (Bisbee) districts and from zinc-copper ore from a property at Jerome, and most of the remaining silver came from zinc-lead ore from the Big Bug, Harshaw, Old Hat, Pima, and Warren (Bisbee) districts, silver ore from the Ash Peak and Casa Grande districts, zinc-copper ore from the Verde (Jerome) district, and copper ore from the Globe-Miami district. About 97 percent of its copper production was recovered from copper ore from 10 mines in the Ajo, Copper Mountain (Morenci), Eureka (Bagdad), Globe-Miami, Mineral Creek (Ray), Pioneer (Superior), Verde (Jerome), and Warren (Bisbee) districts; and 91 percent of its lead production and 84 percent of its zinc production were recovered from zinc-lead ore from five mines in the Big Bug (Humboldt), Harshaw, Old Hat, Pima, and Warren (Bisbee) districts. Most of the remaining zinc came from zinc-copper ore from three mines in the Cochise (Dragoon), Eureka (Bagdad), and Verde (Jerome) districts.

Outstanding features of Arizona's mining activities in 1949 were suspension in June of copper mining at the Copper Queen mine of the Phelps Dodge Corp. at Bisbee and curtailment of operations at other large copper-producing mines, resulting from a sharp drop in copper demand followed by continuous declines in the price of copper during the second quarter of the year; the

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Prepared by C. E. Needham and Paul Luff, Salt Lake City Office, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

record output of zinc-lead ore from mines in the Aravaipa, Big Bug, Pima, Old Hat, and Warren (Bisbee) districts; the notable production of zinc in the Verde (Jerome) district; the sinking of two shafts by the Magma Copper Co. for underground development of the large copper ore body at the San Manuel property in the Old Hat district; the development of two large copper ore bodies in the Globe-Miami district by the Miami Copper Co.; and the beginning of the construction of a new copper smelter at Ajo by the Phelps Dodge Corp.

Of the 38,372,879 tons of ore produced in 1949 in Arizona, 34,482,033 tons (90 percent) were treated at 33 milling plants, 3,368,001 tons (9 percent) at 1 copper leaching plant, and 522,845 tons (1 percent) were shipped crude to smelters. The output of copper ore declined from 39,072,204 tons in 1948 to 37,365,611 tons in 1949 (a 4-percent loss), but the output of zinc-lead ore rose from 664,603 tons to 773,617 tons (a 16-percent gain and the largest annual output in the history of the State).

The value of the metal production herein reported has been calculated at the following prices; corresponding prices for 1948 are shown in parentheses: Gold, \$35 per fine ounce (\$35); silver, \$0.9050505 per fine ounce (\$0.9050505); copper, \$0.197 per pound (\$0.217); lead, \$0.158 per pound (\$0.179); and zinc, \$0.124 per pound (\$0.133). At the beginning of the year the price of copper was 23.5 cents a pound, lead 21.5 cents a pound, and zinc 17.5 cents a pound. After continuous declines during the second quarter of the year the price of copper reached a low of 15.7 cents a pound June 17, lead dropped to a low of 12 cents a pound May 26, and zinc dropped to a low of 9 cents a pound June 15. At the end of the year the price of copper was 18.5 cents a pound, lead 12 cents a pound, and zinc 9.75 cents a pound.

Mine production of gold, silver, copper, lead, and zinc in Arizona, 1948-49, in terms of recoverable metals

Metals	1948		1949	
	Quantity	Value	Quantity	Value
Gold, fine ounces......	109,487	\$3,832,045	108,993	\$3,814,755
Silver, fine ounces....	4,837,740	4,378,399	4,970,736	4,498,767
Copper, pounds.........	750,242,000	162,802,514	718,020,000	141,449,940
Lead, pounds...........	59,798,000	10,703,842	67,136,000	10,607,488
Zinc, pounds...........	108,956,000	14,491,148	141,316,000	17,523,184
Total value..........	....	196,207,948	....	177,894,134

Mine production of gold, silver, copper, lead, and zinc in Arizona
in 1949, by months, in terms of recoverable metals

Month	Gold (fine ounces)	Silver (fine ounces)	Copper (short tons)	Lead (short tons)	Zinc (short tons)
January	10,160	422,152	32,926	2,320	4,725
February	8,971	409,678	31,986	2,430	5,180
March	11,590	513,974	37,271	2,815	5,905
April	10,671	486,648	34,876	2,890	5,750
May	10,300	451,320	32,326	2,835	5,865
June	8,656	407,674	27,866	3,170	6,565
July	7,166	338,648	25,376	2,725	5,635
August	6,730	358,920	22,361	2,680	5,990
September	7,990	362,820	25,951	2,720	5,695
October	9,171	406,184	27,491	2,995	6,370
November	8,988	404,698	29,390	3,000	6,440
December	8,600	408,020	31,190	2,988	6,538
Total: 1949	108,993	4,970,736	359,010	33,568	70,658
1948	109,487	4,837,740	375,121	29,899	54,478

Ore sold or treated in Arizona in 1949, with content in terms of recoverable metals

Source	Mines producing	Ore (short tons)	Gold (fine ounces)	Silver (fine ounces)
Dry and siliceous gold ore........	76	4,567	2,178	7,156
Dry and siliceous gold-silver ore.	9	687	199	6,898
Dry and siliceous silver ore......	29	33,713	704	314,241
	114	38,967	3,081	328,295
Copper ore........................	88	37,365,611	78,735	2,412,359
Lead ore..........................	117	15,829	1,710	76,822
Lead-copper ore...................	3	45	......	271
Zinc ore..........................	8	10,344	127	11,076
Zinc-copper ore...................	7	163,213	4,336	198,089
Zinc-lead ore.....................	40	773,617	20,429	1,920,630
Zinc-lead-copper ore..............	6	5,253	10	23,131
Total lode mines..............	1/340	38,372,879	108,428	4,970,673
Total placers.................	32	....	565	63
Total: 1949...................	372	38,372,879	108,993	4,970,736
1948..........................	399	39,925,686	109,487	2/4,837,740

Source	Copper (pounds)	Lead (pounds)	Zinc (pounds)
Dry and siliceous gold ore........	22,668	22,715	80,446
Dry and siliceous gold-silver ore.	1,683	6,580	2,158
Dry and siliceous silver ore......	40,403	8,279	....
	64,754	37,574	82,604
Copper ore........................	3/703,053,481	3,974	......
Lead ore..........................	66,923	4,457,110	252,070
Lead-copper ore...................	2,789	12,792	1,010
Zinc ore..........................	96,643	89,019	2,152,656
Zinc-copper ore...................	8,663,807	143,602	16,085,522
Zinc-lead ore.....................	5,901,596	62,113,354	121,621,724
Zinc-lead-copper ore..............	170,007	278,575	1,120,414
Total lode mines..............	718,020,000	67,136,000	141,316,000
Total placers.................	....	....	....
Total: 1949...................	718,020,000	67,136,000	141,316,000
1948..........................	4/ 750,242,000	59,798,000	108,956,000

1/ A mine producing more than 1 class of ore is counted but once in arriving at total for all classes.
2/ Includes 80 ounces recovered from underground mine-water precipitates.
3/ Includes 76,951,738 pounds recovered from ore leached and mine-water precipitates.
4/ Includes 86,709,683 pounds recovered from ore leached and mine-water precipitates.

Principal producing districts in Arizona in 1949

District	Gold (fine ounces)	Silver (fine ounces)	Copper (pounds)	Lead (pounds)	Zinc (pounds)	Total value
Copper Mountain (Morenci).......	8,539	606,111	283,867,000	1,300	....	$56,769,430
Globe-Miami.......	2,505	126,826	160,377,000	61,600	....	31,806,461
Ajo...............	38,455	471,134	116,700,000	....	....	24,762,225
Warren (Bisbee)...	11,837	1,166,210	19,680,700	27,730,300	70,785,100	18,505,611
Pioneer (Superior)	12,842	401,960	43,232,600	1,400	....	9,330,307
Verde (Jerome)....	10,790	509,828	34,429,800	71,600	8,700,000	8,711,854
Mineral Creek (Ray)	423	34,514	37,190,600	634,500	116,000	7,487,225
Big Bug...........	14,035	581,351	364,900	6,659,500	17,595,600	4,323,317
Eureka (Bagdad)...	1,162	72,544	15,812,000	375,200	4,607,200	3,851,865
Old Hat (Oracle)..	1,771	143,528	983,400	13,575,000	10,389,200	3,818,726
Pima..............	35	252,334	695,000	8,464,000	14,353,500	3,483,661
Harshaw...........	87	140,011	152,600	3,091,100	5,894,200	1,379,099

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE JULY 18, 1950.

MINERAL MARKET REPORT
MMS NO. 1887

MINERAL EARTH PIGMENTS AND MANUFACTURED IRON OXIDE PIGMENTS IN 1949

Demand for mineral earth pigments declined somewhat in 1949 and sales of most items were lower than in the previous year. Of the 89,628 tons of pigment reported the natural red oxides constituted 20 percent, pure red oxide 18 percent, "other red oxides" 18 percent, and pure yellows 10 percent. Additional detail is shown in the accompanying table.

The following firms contributed 1949 production data given in the accompanying table:

American Pigment Corp., Pulaski, Va. (Plants at Hiwassee and Pulaski, Va.)
Blue Ridge Talc Co., Inc., P. O. Box 7, Henry, Va.
Clinton Metallic Paint Co., Box 278, Clinton, N. Y.
The De Angelis Coal Co., Ione, Calif. (Plant near Buena Vista, Calif.)
E. I. du Pont de Nemours & Co., Methods Div., Du Pont Bldg., Wilmington 98, Del. (Plant at Newark, N. J.)
Forche & Smith, Falls Creek, Pa.
Keystone Filler & Mfg. Co., Muncy, Pa.
Magnetic Pigment Division, Columbian Carbon Co., 41 East 42nd St., New York 17, N. Y. (Plants at Trenton and Monmouth Junction, N. J.)
Mineral Pigments Corp., Washington Blvd., Muirkirk, Md.
Minnesota Mining and Mfg. Co., 900 Fauquier Ave., St. Paul, Minn. (Plant at Copley, Ohio)
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill. (Plant at Bowman, N. Dak.)
New Riverside Ochre Co., Cartersville, Ga.
Penn Paint & Filler Co., Antes Fort, Pa.
Prince Mfg. Co., Bowmanstown, Pa.
Reichard-Coulston, Inc., 15 E. 26th St., New York 10, N. Y. (Plant at Bethlehem, Pa.)
Ricketson Mineral Color Works, 229 E. Wisconsin Ave., Milwaukee 2, Wis.
Geo. B. Smith Chemical Works, Inc., Maple Park, Ill.
Solomon Grinding Service, 1116 Ridgely Bldg., Springfield, Ill.
Stabilized Pigment Co., New Brunswick, N. J. (Plant at Piscataway, N. J.)
C. K. Williams & Co., 640 N. 13th St., Easton, Pa.
C. K. Williams & Co., Western Div., 4650 Shellmound St., Emeryville 8, Calif.
C. K. Williams & Co., 2001 Lynch Ave., East St. Louis, Ill.
C. K. Williams & Co., Warren, Ohio.

Prepared by Joseph C. Arundale and F. D. Gradijan, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

Natural mineral pigments and manufactured iron-oxide pigments sold by processors in the United States, 1948-49, by kinds

Pigment	1948		1949	
	Short tons	Value	Short tons	Value
Mineral blacks	14,383	$225,129	2,009	$50,519
Precipitated magnetic blacks	1,585	347,591	1,415	320,858
Natural brown oxides (metallic browns)	5,862	312,163	4,962	259,413
Vaydyke brown (finished pigment)	188	31,729	106	18,199
Pure browns (96 percent or better iron oxides)	910	222,712	958	243,943
Natural red oxides	20,902	874,110	18,082	807,800
Pure red oxides (98 percent or better Fe_2O_3)	17,345	3,939,317	15,918	3,661,241
Venetian reds	5,361	482,651	4,598	418,043
Pyrite cinder	1,697	121,560	1,637	121,650
Other red iron oxides	15,104	1,751,185	16,091	1,867,795
Natural yellow oxides (high Fe_2O_3)	(1/)	(1/)	5,149	113,154
Pure yellows (85 percent or better Fe_2O_3)	9,734	1,648,529	8,898	1,611,076
Ochers (low Fe_2O_3)	6,769	164,902	3,989	125,091
Siennas:				
Burnt	973	132,845	751	117,722
Not burnt	1,072	135,714	1,160	164,765
Umbers:				
Burnt	3,085	330,224	2,481	294,610
Not burnt	711	61,846	629	64,951
Other	5,636	175,215	795	92,084
	111,317	10,957,422	89,628	10,352,914

(1/) Included with "other."

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For immediate release

MINERAL MARKET REPORTS
MMS NO. 1888

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE.

COPPER IN 1949

For several months after the first quarter of 1949 supplies of copper were considerably in excess of demand in the United States and, as a consequence, prices dropped, stocks rose, and production was curtailed, according to the Bureau of Mines, United States Department of the Interior. These months marked the first protracted period that supplies were more than adequate for all needs since the beginning of World War II. The recession in the copper industry accompanied the period of general industrial reaction at the time. In recovering substantially in the late months of the year copper followed the pattern for industry in general but made greater advances than many other commodities. For the year as a whole mine production of copper dropped 10 percent, refinery output from domestic and foreign primary materials decreased 16 percent, apparent consumption of new copper fell 12 percent, total consumption of copper in the form of metal declined 17 percent, and the average quoted price for electrolytic copper was 13 percent less than in 1948.

At the beginning of the year demand was considerably in excess of supply owing partly to the work stoppage at the Kennecott Copper Corp.'s Utah Copper mine, West Mountain (Bingham) district, Utah, largest producer in the United States, beginning October 24, 1948 and lasting until February 8, 1949. This strike curtailed output by about 50,000 tons in 1948 and 35,000 in 1949. Demand for copper was heavy during the first quarter when, according to records of the Copper Institute, 305,085 tons were delivered to customers; deliveries in the second quarter totaled 154,353 tons, or little more than one-half as much. In the third quarter deliveries advanced to 239,170 tons and in the fourth to 332,987 tons, the highest quarterly total for the year. Refined copper production was affected adversely in 1949 by the strike from June 30 to October 28 at the Carteret (New Jersey) plant of the American Metal Co.

The average quoted price for electrolytic copper, f.o.b. refinery, was 23.2 cents a pound from August 10, 1948 until the end of March 1949 when a decline of 1/8 cent a pound marked the beginning of a major downtrend. By the end of April the price was 19.7 cents, and by the end of June it was 15.7 cents. An improvement in demand caused the price to turn upward in early July and on November 3 it rose to 18.2 cents, where it continued beyond the year end.

Following the collapse in demand and price in the second quarter domestic production dropped. Mine output was 184,324 tons in January-March, 201,509 tons in April-June, 170,624 tons in July-September and 196,293 tons in October-December. The curtailment in output, initiated on a large scale in May, was brought about chiefly by a reduction in the work week from 48 to 40 hours at leading copper-producing properties rather than by numerous mine closures, although some small mines ceased to produce. By the end of 1949 operation on a 48-hour basis had been reestablished at most properties.

Prepared by Helena M. Meyer and A. J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Receipts of unmanufactured copper set a new high record in 1949, exceeding the previous peak in 1948 by 9 percent. The continuation of large imports despite the drop in demand caused dissatisfaction among the domestic mining companies that have no large foreign mining subsidiaries. In the late months of the year, after demand resumed large proportions, imports of substantial quantities of copper were again needed to fill total domestic requirements.

Legislation covering the suspension of the excise tax of 4 cents a pound on copper imported into the United States called for resumption of the tax after March 31, 1949, but the suspension was continued to June 30, 1950 by a bill signed by the President on March 31. On February 14 Chile's acceptance of the General Agreement on Tariffs and Trade, concluded by the United States and 22 other countries at Geneva on October 30, 1947, made a cut from 4 to 2 cents in the excise tax on copper effective when the tax suspension ended. As a result of the reduced demand for copper in the second quarter of 1949 there was agitation in Congress for withdrawal of the tax suspension, but the year closed without such action having been taken. Efforts to pass mine subsidy legislation in 1949, likewise, were unsuccessful.

Exports of refined copper, by far the most important class, decreased 3 percent in 1949, marking a continuation of the downward trend in 1948.

Effects of the devaluation of the British pound and of other currencies, in mid-September, on world trade in copper and manufactures of copper, as well as on trade in other products, may not be determined for a long time.

Salient statistics of the copper industry in the United States, 1947-49, in short tons

	1947	1948	1949
New copper produced-			
From domestic ores, as reported by-			
Mines	847,563	834,813	752,750
Ore produced:			
Copper ore 1/	87,864,898	84,729,043	76,032,531
Average yield of copper——percent	.90	.92	.91
Smelters	862,872	842,477	757,931
Refineries	909,213	860,022	695,015
From foreign ores, matte, etc., refinery reports	250,757	247,424	232,912
Total new refined, domestic and foreign	1,159,970	1,107,446	927,927
Secondary copper recovered from old scrap only	503,376	505,464	383,548
Imports (unmanufactured) 2/	413,890	507,449	552,704
Refined 2/	149,478	249,124	275,811
Exports of metallic copper 3/	196,999	207,022	195,990
Refined (ingots, bars, etc.)	147,642	142,598	137,827
Stocks at end of year	273,000	250,000	322,000
Refined copper	60,000	67,000	61,000
Blister and materials in solution	213,000	183,000	261,000
Withdrawals from total supply on domestic account:			
Total new copper	1,286,000	1,214,000	1,072,000
Price, average 4/——cents per pound	20.9	21.7	19.7

1/ Includes old tailings. 2/ Data include copper imported for immediate consumption plus material entering country under bond. 3/ Total exports of copper, exclusive of ore, concentrates, composition metal, and unrefined copper. Exclusive also of "Other manufactures of copper," for which figures of quantity are not recorded. 4/ Exclusive of bonus payments of the Office of Metals Reserve. Premium Price Plan ended June 30, 1947.

Mine Production

The drop of 10 percent in mine production in 1949 was caused by the labor strike at the chief copper-producing mine, the Utah Copper, West Mountain district, Utah, through February 7 and by the curtailed operating week (48 to 40 hours) at most major properties during much of the second half of the year. All large copper-producing States, had smaller outputs in 1949 than in 1948.

Mine production of recoverable copper in the United States, 1945-49, by States, in short tons

State	1945	1946	1947	1948	1949
Alaska	5	2	12	16	4
Arizona	287,203	289,223	366,218	375,121	359,010
California	6,473	4,240	2,407	481	649
Colorado	1,485	1,754	2,150	2,298	2,403
Idaho	1,548	1,038	1,640	1,624	1,438
Michigan	30,401	21,663	24,184	27,777	19,506
Missouri	3,399	1,857	1,760	2,370	3,670
Montana	88,506	58,481	57,900	58,252	56,611
Nevada	52,595	48,616	49,603	45,242	38,058
New Mexico	56,571	50,191	60,205	74,687	55,388
Oregon	1	7	14	2	20
Pennsylvania	(1)	(1)	(1)	(1)	(1)
Tennessee	1/ 12,385	1/ 12,850	1/ 12,686	1/ 14,248	1/ 13,449
Texas	55	3	6	23	24
Utah	226,376	114,284	266,533	227,007	197,245
Vermont	(1)	(1)	(1)	(1)	(1)
Virginia	70	—	5	—	—
Washington	5,821	4,527	2,240	5,665	5,275
Wyoming	—	1	—	—	—
	772,894	608,737	847,563	834,813	752,750

1/ Pennsylvania and Vermont included under Tennessee. Bureau of Mines not at liberty to publish separate figures.

Refinery Production

Total refinery output from domestic and foreign primary crude materials dropped 16 percent in 1949, influenced by the Utah Copper mine strike, and by the strike from June 30 to October 28 at the Carteret (New Jersey) plant of the American Metal Co., and by the reduced work weeks at mines and plants.

Primary and secondary copper produced by regular refining plants in the United States and imported, 1947-49, in short tons

	1947	1948	1949
Primary:			
Domestic: 1/			
Electrolytic 2/	805,718	745,102	606,826
Lake 2/	23,998	26,511	17,608
Casting	79,497	88,409	70,581
	909,213	860,022	695,015
Foreign: 1/			
Electrolytic	250,757	247,424	232,912
Refinery production of new copper	1,159,970	1,107,446	927,927
Imports of refined copper (General)	149,478	249,124	275,811
Total new refined copper made available	1,309,448	1,356,570	1,203,738
Secondary:			
Electrolytic 3/	4/249,560	4/222,602	4/196,850
Casting	19,525	22,774	15,542
	269,085	245,376	212,392
Grand total	1,578,533	1,601,946	1,416,130

1/ The separation of refined copper into metal of domestic and foreign origin is only approximate, as an accurate separation of the amounts at this stage of manufacture is not possible.

2/ Some copper from Michigan is electrolytically refined at an Eastern refinery and is included as electrolytic copper.

3/ Includes some secondary Lake copper.

4/ Copper from scrap at Lake refineries included under "casting" copper in 1945-49. Includes copper reported from foreign scrap in 1947-49.

In addition to their output of metallic copper the regular refineries produced bluestone (hydrous copper sulfate) having a copper content of 4,842 short tons as compared with 6,132 tons in 1948. Other companies reported 14,907 and 18,054 tons, respectively, or totals for the two types of producers of 19,749 and 24,186 tons respectively.

Secondary copper

The following table summarizes the production of secondary copper during 1945 to 1949, inclusive.

Secondary copper produced in the United States, 1945-49, in short tons

	1945	1946	1947	1948	1949
Copper recovered as unalloyed copper	112,856	136,909	303,092	284,026	250,089
Copper recovered in alloys 1/	893,660	666,637	658,649	688,762	463,054
Total secondary copper	1,006,516	803,546	961,741	972,788	713,143
From new scrap	509,421	397,093	458,365	467,324	329,595
From old scrap	497,095	406,453	503,376	505,464	383,548

1/ Includes copper in chemicals, as follows: 1945, 18,666; 1946, 19,192; 1947, 18,838; 1948, 17,612; 1949, 14,840.

Consumption

The usual calculation of apparent consumption indicates that there was a drop of 12 percent in 1949 as compared with 1948. During several months in mid-year more copper was available than industry could use, a previously unprecedented situation in the postwar period.

New refined copper withdrawn from total year's supply on domestic account, 1947-49, in short tons

	1947	1948	1949
Total supply of new copper	1,309,448	1,356,570	1,203,738
Stocks at beginning of year	96,000	60,000	67,000
Total available supply	1,405,448	1,416,570	1,270,738
Copper exported 1/	147,642	142,598	137,827
Stocks at end of year	60,000	67,000	61,000
	207,642	209,598	198,827
Withdrawn on domestic account 2/	1,286,000	3/1,214,000	3/1,072,000

1/ Includes refined copper in ingots, bars, or other forms.
2/ Adjusted for Office of Metals Reserve stock changes; MR stocks consigned to National Strategic Stock Pile late in 1948.
3/ Includes copper delivered by industry to the Government strategic stock pile.

Actual consumption of refined copper, by classes of users, is shown in the table that follows. In this table no effort is made to distinguish between new and old copper.

Refined copper consumed in 1947-49, in short tons

Item	1947	1948	1949
Cathodes	77,067	85,725	78,537
Wire bars	824,617	806,073	704,156
Ingots and ingot bars	159,193	140,875	106,500
Cakes and slabs	222,595	210,170	164,312
Billets	173,779	170,413	123,747
Other	6,043	7,328	5,944
	1,463,294	1,420,584	1,183,196

Stocks

Stocks of copper at primary smelting and refining plants in the United States at end of year, 1945-49, in short tons

Year	Refined copper	Blister and materials in process of refining 1/
1945	130,000	331,000
1946	96,000	254,000
1947	60,000	213,000
1948	67,000	183,000
1949	61,000	261,000

1/ Includes copper in transit from smelters in the United States to refineries therein.

Fabricators held 354,992 tons of refined copper (including in process metal and primary fabricated shapes) at the end of 1949, according to the United States Copper Association, or a decline of 6 percent as compared with inventories when the year began. Working stocks were reported as 285,298 tons, or slightly less than in 1948. After accounting for unfilled purchases of metal, the deficiency of stocks in relation to unfilled orders was found to be 36,920 tons, compared with 151,060 at the end of 1948.

Prices

The average quoted price for copper, f.o.b. refinery, was 23.2 cents a pound from August 10, 1948 until the end of March 1949. A downtrend beginning March 29 carried the price to 15.7 cents a pound by the end of June. Early in July the downtrend was reversed and on November 3 the price was raised to 18.3 cents, at which level it continued beyond the end of the year. The average of 19.20 cents for the year was 13 percent under that of 22.04 cents in 1948. The average monthly price for export copper, f.o.b. refinery, was 19.421 cents in 1949 and 22.348 cents in 1948. The average weighted price for refined copper delivered f.o.b. refinery was 19.7 cents a pound, compared with 21.7 cents in 1948.

The price of the British Ministry of Supply was £140 per long ton (equivalent to 25.2 cents a pound) from October 1, 1948 through May 15, 1949. It began to drop on May 16 and was £104 on July 12, rebounding to £107 10s. on July 13. On September

22, following devaluation of the pound sterling, the price returned to £140 (then equivalent to only 17.5 cents a pound) and on November 4 rose to £153 (19.1 cents a pound).

Foreign Trade

Figures on imports and exports, compiled from records of the Department of Commerce, are shown in the following tables.

Copper (unmanufactured) imported into the United States, 1949, in short tons 1/

Country	Ore (copper content)	Concentrates (copper content)	Regulus, black or coarse copper and cement (copper content)	Unrefined black blister and converter copper in pigs or converter bars	Refined in ingots, plates, or bars	Old and scrap copper fit only for remanufacture and scale and clippings
Australia	650	289	—	—	—	2
Bolivia	992	3,675	4	—	—	—
Canada	283	27,271	518	29	47,930	2,794
Chile	3,695	19,104	199	51,770	210,443	175
Cuba	86	15,514	—	—	—	244
Ecuador	8	745	59	—	—	—
Mexico	271	11,167	739	51,053	1,468	8
Newfoundland and Labrador	—	3,934	—	—	—	62
Northern Rhodesia 2/	—	108	1	27,122	—	13
Peru	460	6,248	538	309	14,756	5
Philippines, Republic of	(3)	3/7,910	—	—	—	59
Union of South Africa	294	5,748	7	2,771	—	99
Yugoslavia	—	—	—	14,727	—	—
Other countries	79	7,101	19	4,595	1,214	3,340
	6,818	108,814	2,084	152,376	275,811	6,801

1/ Data include copper imported for immediate consumption plus material entering the country under bond.

2/ Tonnages credited to Southern Rhodesia by the Department of Commerce have been added to Northern Rhodesia.

3/ Some copper in "ore" and "other" is not separately classified and is included under "concentrates".

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Copper exported from the United States in 1949, by countries, in short tons

Country	Ore, concentrates, composition metal and unrefined copper (copper content)	Refined in bars, ingots, etc.	Old and scrap	Pipes and tubes	Plates and sheets	Rods	Wire (bare)	Insulated wire and cable
Algeria	---	1,727	---	(1)	---	---	---	(1)
Argentina	---	1,871	---	78	1	---	2	244
Austria	---	2,481	643	4	19	---	86	676
Belgium and Luxembourg	---	1,404	28	41	3	(1)	11	115
Brazil	---	3,198	---	354	62	8	23	340
Canada	8	50	354	303	96	190	1,286	2,193
Colombia	---	40	---	212	128	1	121	1,589
Cuba	4	5	---	670	120	23	321	1,264
Denmark	---	831	---	2	---	4,026	280	368
France	---	23,948	168	5	1	2	42	1,296
Germany	118	10,600	2,896	---	1	---	---	28
Greece	---	241	---	22	1	---	9	426
India	1	20,514	2,209	94	25	1	14	251
Italy	---	19,914	1,417	35	6	403	898	245
Mexico	1	6	54	373	115	75	241	1,033
Netherlands	---	11,611	---	155	8	7,634	104	162
Norway	---	495	---	63	14	4	45	14
Philippines, Republic of	---	---	(1)	85	26	3	146	2,117
Switzerland	---	9,374	---	39	---	168	1	10
Union of South Africa	---	3	---	46	6	2	1,542	316
United Kingdom	68	26,236	---	7	30	1	1	14
Venezuela	---	1	---	222	79	4	1,104	2,604
Other	---	3,277	515	534	347	133	1,604	9,583
	200	137,827	8,284	3,344	1,088	12,678	7,881	24,888

1/ Less than one ton.

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MINERAL MARKET REPORT
M.M.S. NO. 1889

For immediate release

SECONDARY ALUMINUM IN 1949

The recovery of secondary aluminum from scrap totaled 180,762 short tons, valued at $57,012,335, a decrease of 37 percent in quantity from the 286,777 tons valued at $83,165,330 reclaimed in 1948.

Of the recoverable aluminum content of nonferrous scrap consumed in 1949, 99 percent was contained in aluminum scrap and 99 percent of the total secondary aluminum recovered was reclaimed in aluminum-base products. In other words most aluminum-bearing scrap was used in aluminum products. The proportions were about the same in other years. Recovery from old scrap decreased from 48 percent of the total secondary recovery in 1947 to 33 percent in 1948 and 25 percent in 1949 chiefly because of decreasing supplies of aircraft scrap.

Production of all types of aluminum alloy ingot except aluminum-copper- and aluminum-silicon-nickel alloys, decreased in 1949 but output of "Other aluminum-copper" ingot declined much more than that of any other important classification—89 percent. Production from aircraft scrap, when melted separately is usually assigned to this type of ingot. It is suitable for deoxidizing some kinds of steel and when made for that purpose may be classed as deoxidizing ingot. Ingot made from aircraft scrap, to which a little pure aluminum may have to be added, can be used for wrought products such as aluminum roofing and siding but most of the alloy ingot made at secondary plants is used for castings. Total production of alloy ingot, secondary output at primary plants, and recovery of aluminum from scrap in aluminum castings decreased 38, 33, and 27 percent respectively.

Although zinc apparently gained on aluminum for use in die castings in 1949 there were indications of a growing preference for aluminum in the automobile industry. The aluminum die casting plant completed by the Ford Motor Company in 1949 was reported to be the largest and most modern of its kind. A large increase in the use of aluminum die castings on 1951 Ford car models was expected. Other automobile manufacturers were said to be considering changing from zinc die castings to aluminum. A number of types of aluminum alloy ingot which can be made from scrap, are used for aluminum die castings but very little zinc scrap is used—only 658 tons in 1949—in zinc die castings. The chief ingredient of the latter is special high grade slab zinc, of which 195,691 tons were used in this product in 1949.

Prepared by Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Consumption of aluminum scrap in 1949 was 125,456 tons less than in 1948. This can be attributed to increased availability of primary aluminum, to the business recession and to imports of secondary ingot from abroad. Primary ingot was more plentiful in 1949 than it had been for a number of years. As primary production remained at virtually the same high level as in 1948 and demand was weaker, plants tha had been using secondary ingot or scrap could turn to primary if they so desired. Imports of aluminum scrap were reported as 40,120 tons, much of it remelted into ingot for convenience in shipping. This remelt ingot when used in this country was not generally recorded as scrap consumed and it depressed scrap consumption because it was used in place of scrap that might have been consumed. Aluminum scrap consumption declined 39 percent; usage of primary aluminum declined 7 percent.

Treatment of all classes of aluminum scrap decreased except that of scrap sheet and utensil which almost doubled. All groups used more of this material but the primary plants increased their consumption from 376 tons in 1948 to 7,080 tons in 1949. Use of aircraft scrap experienced the greatest reduction, 79 percent, and that of alloy sheet, the largest item in both years, decreased 39 percent. The smallest decrease was 4 percent in consumption of borings and turnings. Secondary smelters and Naval Air Stations consumed two thirds of the total aluminum scrap processed in both 1948 and 1949. The rolling mills and reduction plants used about one third of the total in each year. Foundries and manufacturers of such products as drain cleaners, hair-wave pads and chemicals used about 2 percent of the total in each year.

Stocks of aluminum-base scrap in the hands of consumers decreased in 1949 as did the scrap stocks of the other nonferrous metals. Inventories of castings and forgings and those of residues were about half as large as at the end of 1948 and those of sheet, clippings, turnings, etc., and of aircraft scrap were about four fifths as large.

Consumption of old and new aluminum scrap in the United States in 1949
gross weight in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries				Total scrap used
			Aluminum rolling mills and reduction plants		Foundries and other manufacturers		
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
Pure clippings, wire and foil..................	9,618	273	15,057	61	241	17	25,267
Castings and forgings...	14,310	12,027	3,646	2,310	499	1,109	33,901
Alloy sheet.............	21,027	2,511	32,561	890	1	60	57,050
Scrap sheet and sheet utensil...............	——	5,900	4,472	2,608	1,583	801	15,364
Borings and turnings....	27,532	——	2,418	——	213	——	30,163
Aircraft scrap..........	——	10,188	——	1,513	——	——	11,701
Miscellaneous aluminum and dross	12,798	12,288	——	66	441	——	25,593
Total...............	85,285	43,187	58,154	7,448	2,978	1,987	199,039

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Secondary aluminum 1/ recovered in the United States, 1948-49, in short tons

Secondary aluminum recovered		
Form of recovery	1948	1949
As metal	2,384	343
Aluminum alloys	282,302	178,502
In brass & bronze	455	450
In zinc-base alloys	776	600
In magnesium alloys	354	426
In chemical compounds	506	441
Grand total	286,777	180,762

Recoverable aluminum-alloy content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Aluminum-base 2/	190,736	135,789
Copper-base	99	82
Zinc-base	95	99
Magnesium-base	199	196
Total	191,129	136,166
Old scrap:		
Aluminum-base 3/	95,101	44,030
Copper-base	93	134
Zinc-base	292	309
Magnesium-base	162	123
Total	95,648	44,596
Grand total	286,777	180,762

1/ In accordance with common usage, the term "aluminum" covers aluminum alloys, and the figures include all constituents of the alloys recovered from aluminum-base scrap.

2/ Recoverable aluminum content of new aluminum-base scrap was 179,516 tons in 1948 and 128,012 tons in 1949.

3/ Recoverable aluminum content of old aluminum-base scrap was 86,028 tons in 1948 and 41,194 tons in 1949.

Production of secondary aluminum and aluminum-alloy products in the United States, 1947-49, gross weight, in short tons

Product	1947	1948	1949
Secondary aluminum ingot: 1/			
Pure aluminum (98.5 percent)	5,052	2,328	326
Silicon (max. Cu, 1 percent)	12,370	11,786	7,376
Silicon (Cu, 1 to 2.5 percent)	5,108	4,694	3,532
No. 12 aluminum	27,605	19,509	10,605
Other aluminum-copper (max. Si, 2.5 percent) alloys	89,642	17,612	2/ 1,955
Copper-silicon (each over 2.5 percent) alloys	72,286	80,940	52,900
Aluminum-copper- or aluminum-silicon-nickel alloys	2,101	3,791	5,152
Deoxidizing and other destructive uses	28,965	34,143	23,828
Aluminum hardeners	2,695	3,989	2,209
Al-Mg and Al-Zn alloys	3,833	2,860	2,731
Miscellaneous	10,258	8,387	6,892
Total	259,915	190,039	117,506
Secondary aluminum at primary plants 3/	84,074	93,159	61,990
Aluminum powder 4/	53	56	17
Aluminum-alloy castings	7,645	5,289	3,872
Aluminum in chemicals	379	506	441

1/ Gross weight of alloys, including copper, silicon, and other added elements; total secondary ingot contained 1,525 tons of primary aluminum in 1947, 3,033 tons in 1948, and 2,206 tons in 1949.

2/ Of the total, 1,785 tons produced at naval air stations.

3/ Combined with primary aluminum for the production of wrought products and castings

4/ Does not include production measured as ingot for graining, powder, atomizing, or chemical purposes.

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UNITED STATES DEPARTMENT OF THE INTERIOR
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MINERAL MARKET REPORT
M.M.S. NO. 1890

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FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE.

SECONDARY ANTIMONY IN 1949

Antimony recovered in 1949 from lead- and tin-base scrap totaled 18,061 short tons valued at $13,990,051, a 16 percent decrease in quantity from the 21,592 tons valued at $15,835,573 reclaimed in 1948.

Of the total secondary antimony recovered 16,286 tons was reclaimed at secondary copper and lead smelters and 1,775 tons at primary lead refineries. New supply of primary antimony from domestic and foreign sources available for consumption in 1949, in terms of recoverable metal, was 11,947 tons.

Old battery plates yielded 55 percent of all secondary antimony recovered in 1949. However, consumption of battery plates decreased 18 percent from the quantity used in 1948 and was 23 percent under the peak year of 1947. Secondary antimony recovered in antimonial lead, in other lead-base alloys and in tin-base alloys also decreased. Remelters, smelters and refiners recovered 94 percent of the secondary antimony reclaimed, and manufacturers and foundries the remaining 6 percent. Data on consumption of purchased scrap from which antimony was recovered will be found in the tables on consumption of lead- and tin-base scrap in the sections of this chapter devoted to those metals. Products in which antimony was recovered are included in the lead- and tin-products tables.

All secondary antimony was reclaimed in lead and tin alloys, none being recovered as unalloyed metal, whereas 61 percent of the primary antimony used, exclusive of 1,620 tons of primary antimony recovered from lead silver ores at primary lead smelters, emerged in metal products, chiefly lead and tin. About 100,000 tons of antimonial lead scrap were softened to produce refined lead, the resulting antimonial lead dross byproduct being used in other metallic products.

Control of receipts and inventories of antimony under General Preference Order M-112, was revoked on March 31. End-use restrictions had been lifted previously and new supplies together with declining consumption made further control unnecessary.

Prepared by Archie J. McDermid and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Secondary antimony recovered in the United States, 1948-49, in short tons

Secondary antimony recovered

Form of recovery	1948	1949
In antimonial lead	14,163	11,566
In other lead alloys	7,225	6,311
In tin-base alloys	204	184
Grand total	21,592	18,061

Recoverable antimony content of scrap

Kind of scrap processed	1948	1949
New scrap:		
Lead-base	3,594	3,085
Tin-base	—	—
Total	3,594	3,085
Old scrap:		
Lead-base	17,816	14,809
Tin-base	182	167
Total	17,998	14,976
Grand total	21,592	18,061

Interior-Duplicating Section-Washington, D. C.

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FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE.

SECONDARY COPPER AND BRASS IN 1949

The recovery of secondary copper from all classes of nonferrous scrap totaled 713,143 short tons, valued at $280,978,342, in 1949--a decrease of 27 percent in quantity from the 972,788 tons, valued at $422,189,992, recovered in 1948.

Rates of operations at plants engaged in the output of secondary copper products changed continually during 1949, decreasing during the first 7 months and increasing in the last 5. Total production from scrap for all sizes and types of plants, from primary refiners to foundries, was substantially less in 1949 than in 1948 but at the end of the year the general trend of activity was strongly upward.

Consumption of copper-base scrap dropped 393,220 tons owing to lowered demand but it is also true that scrap was less available. Sources of military scrap shrank as the armed services held from the market part of their accumulations of munition scrap for conversion to ingot. There was less plant demolition and ship breakage, which provide old scrap, and costs of handling and transporting scrap were higher than in 1948. Secondary smelters, brass mills, foundries and other plants using both refined copper and scrap in 1949 consumed 31 percent less scrap but 23 percent less refined metal in that year than in 1948, an indication that refined copper was more available than scrap.

Secondary copper smelters produced 200,046 tons of brass ingot in 1949, about a third less than in 1948. Their output of other products was 15,892 tons of refined copper including shot, 13,185 tons of copper billets, 15,826 tons of brass mill billets and 2,243 tons of copper powder and chemicals. The principal raw material used by these smelters is copper-base scrap of which they consumed 273,988 tons including 70,422 tons of composition and 48,488 tons of yellow brass scrap. Of the total copper-base scrap consumed 84 percent was recovered in the products mentioned; the remaining 16 percent represents melting loss.

Output of secondary refined copper including both electrolytic and casting grades totaled 241,685 tons in 1949 compared with 275,846 tons in 1948. Of the totals primary producers made all but 29,293 and 30,470 tons respectively. Their secondary production also included 1,149 tons of copper sulfate (copper content) and decreased less than that of any other group. In addition to their secondary output primary refiners produced 927,927 tons of copper in 1949 and 1,107,446 tons in 1948 from primary raw materials. Consumption of copper scrap by this group totaled 415,498 tons in 1949 indicating a recovery of 51 percent which is low because of the total consumed, 275,356 tons was low-grade material. Of the 16 primary smelters and

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Prepared by Helena M. Meyer and Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

refineries which consumed scrap in 1949, eleven were operated by companies owning mines that provided at least part of the ores and concentrates consumed, and 5 were operated on a custom basis only.

Secondary metal recovered from scrap by brass mills totaled 269,577 tons in 1949 compared with 417,603 tons in 1948, representing a decrease of 35 percent. The corresponding drop for copper refiners was 14 percent, for the secondary smelters 31, and for the foundries and miscellaneous manufacturers 25. To obtain their production the brass mills used 276,169 tons of scrap, of which all but a few hundred tons were copper-base, achieving a recovery of 98 percent, the highest recovery of any type of consumer.

The wrought products made by the brass mills require raw materials of high purity in order to have sufficient strength. Brass mills and wire mills used 98 percent of the refined copper consumed and the former were the largest consumers of high grade zinc. It has been estimated that about 70 percent of all brass made is produced by hot rolling. The use of high grade zinc in brass for such production is essential. 1/ It follows that the refined copper and scrap used must also be of high purity.

1/ Freeman, J. R. Jr., Outlook for zinc in Brass Industry: American Metal Market, Vol. 57, No. 70, April 14, 1950, pp 5, 7.

For most brass mill products lead is the major impurity. Even as little as 0.02 percent may render them hot short. In addition to other raw materials the brass mills used 622 tons of brass ingot, chiefly phosphor copper and copper iron hardeners, the latter in manganese bronze and aluminum bronze products. Scrapped brass and bronze castings and process scrap from finishing the castings usually contain lead and so cannot be used by brass mills. Most scrap consumed by brass mills is processed scrap returned to them by fabricator customers. This source is augmented by purchases from dealers. When operations are at a high level the proportion furnished by dealers may range from a third to a half or more. When activity is reduced the percentage purchased from dealers declines. The average percentage of scrap, including home scrap and purchased, in casting department charges is estimated at as high as 75 percent at one of the larger mills. In some products a greater percentage of scrap can be used than in others. Cartridge brass charges can be 100 percent scrap cartridge cases if the latter are free of extraneous material such as steel cases, and are otherwise of good quality. Free turning rod brass charges can contain a high percentage of scrap because the product may contain up to 3 percent lead. No scrap of any kind is used in making copper wire, first, because only copper of highest purity is used and second, because the wire bars from which the wire is drawn are not cast in the brass or wire mills but are purchased from refineries. Most of the copper wire used for transmission purposes is made in the wire mills. Some of the process scrap generated in brass mills consists of scalpings, i.e., the surface layer removed from tube and sheet at certain stages in the milling operations to preclude surface defects in the finished product. Ordinarily 2 or 3 percent of the material processed is removed in this way but the percentage may be increased if surface defects increase in the end products.

Skimmings and other residues generated in brass mills are usually sold to smelters but at least one of the larger mills operates a scrap reclamation plant in which magnetic pulleys, screens, rolls, concentrating tables, cone classifiers and other equipment are used to extract as much of the metallics as possible from the residues, either as concentrates or metal, some of which can then be used without having to be refined. Since the scrap used by the brass mills is of such high quality their recovery of secondary metal is better than for any other type of plant using copper-base scrap.

An important installation that was completed in 1949 was Scoville Manufacturing Company's new strip mill in which continuous casting is used. The chief advantages over previous procedure are melt to melt chemical uniformity, advoidance of segregation in ingots cast and savings in labor. 2/

A recent development in copper alloys consists of the addition of 0.5 percent tellurium to copper to improve machinability. 3/ Based on a rating of 100 for free cutting brass the machinability of the tellurium alloy is 90 and that of copper 20. Selenium may be used in this alloy in place of tellurium. Another new copper alloy, developed at Battelle Memorial Institute and sponsored by the United States Army Signal Corps, is composed of 6.5 percent silver and 93.5 percent copper. 4/ It has over 70 percent of the conductivity of copper and high tensile strength of the order of 160,000 pounds per square inch, a combination that satisfies a war time need.

The accompanying table illustrates the relative importance of scrap in comparison with other copper raw materials in the operations of the principal consumers. If the recovery factors for the different groups, as given in preceding pages of this section are applied to the scrap consumption figures and the items for each column then added, a close approximation of the copper-product output of each group will be obtained because the melting loss in consumption of the refined metals is small. Thus the brass mills' production from copper-base scrap is 98 percent of 275,559 or about 270,000 tons. By adding to this the other figures in the brass mill column a total output of 829,350 tons is obtained. According to figures recently received, 5/ shipments of brass-mill products totaled 771,087 tons. This figure applies to operations of members of the Copper and Brass Research Association and certain other contributors of data.

2/ Roast, Harold J., Scovills New Mill for Rolling Brass Strip: Metal Progress, Vol. 57, No. 2, February 1950, pp 197-200.

3/ Fontana, Mars G., Tellurium Copper: Industrial and Engineering Chemistry, Vol. 42, No. 2, Feb. 1950, P. 73A.

4/ Hodge, Webster and Rose, Kenneth, New Copper-base Alloys Combine High Strength with High Conductivity: Materials and Methods, Vol. 31, No. 1 January 1950, pp 64, 65, 72.

5/ American Bureau of Metal Statistics, 1949 Yearbook.

Secondary copper recovered in the United States, 1948-49, in short tons

Secondary copper recovered		
Form of recovery	1948	1949
As unalloyed copper:		
At primary plants	245,376	212,392
At other plants	38,650	37,697
Total	284,026	250,089
In brass and bronze	653,281	436,457
In alloy iron and steel	2,911	1,552
In aluminum alloys	14,678	9,951
In other alloys	280	254
In chemical compounds	17,612	14,840
Total	688,762	463,054
Grand total	972,788	713,143

Recoverable copper content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Copper-base	458,892	323,666
Aluminum-base	7,231	5,293
Nickel-base	1,192	633
Lead-base	7	-----
Zinc-base	2	3
Total	467,324	329,595
Old scrap:		
Copper-base	500,872	381,491
Aluminum-base	3,831	1,450
Nickel-base	569	436
Lead-base	87	73
Tin-base	104	97
Zinc-base	1	1
Total	505,464	383,548
Grand total	972,788	713,143

Analysis and production of secondary copper and copper-alloy products in the United States, 1948-49

Item produced from scrap	Approximate analysis (percent)						Gross weight produced (short tons)	
	Cu	Sn	Pb	Zn	Ni	Al	1948	1949
Unalloyed copper products:								
Refined copper (electrolytic grade)	100	—	—	—	—	—	231,899	211,039
Casting copper	99	—	—	—	—	—	25,349	17,245
Copper sheet, rod, tubing, etc.	99	—	—	—	—	—	20,989	17,323
Copper powder	98	—	—	—	—	—	2,324	2,273
Copper castings	98	—	—	—	—	—	3,465	2,079
Total							284,026	249,959
Brass and bronze ingots:								
Tin bronze	88	10	—	2	—	—	18,256	12,562
Leaded-tin bronze	88	6	1.5	4.5	—	—	17,934	10,689
Leaded red brass	85	5	5	5	—	—	120,178	71,813
Leaded semired brass	81	3	7	9	—	—	46,521	38,427
High-leaded-tin bronze	80	10	10	—	—	—	24,875	14,788
Do	84	6	8	2	—	—	8,137	4,592
Do	75	5	20	—	—	—	11,412	5,457
Leaded yellow brass	66	1	3	30	—	—	22,535	17,662
Manganese bronze	62	—	—	27	—	5	13,826	9,670
Aluminum bronze	89	—	—	—	—	10	2,063	2,200
Nickel silver	58	2	17	18	14	—)	4,811	3,399
Do	65	4	3	5	22	—)		
Low brass	80	—	—	20	—	—	2,642	1,812
Silicon bronze	92	—	—	4	—	—	2,467	2,233
Conductor bronze	94	2	2	2	—	—	685	399
Hardeners and special alloys	81	—	—	—	—	—	5,936	4,343
Total							[1]302,278	[1]200,046
Brass mill billets made by ingot makers							6,881	2,641
Brass and bronze sheet, rod, tubing, etc.							[2]416,413	[2]265,439
Brass and bronze castings							[3]135,092	[3]99,419
Brass powder							1,333	886
Copper in chemical products (content)							17,612	14,840

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[1] Gross weight of brass and bronze ingot. Includes 234,696 tons of copper, 9,593 tons of lead, 528 tons of nickel, 8,335 tons of tin, 36,944 tons of zinc, 74 tons of aluminum and 12,108 tons of primary metals in 1948; and 158,000 tons of copper, 6,364 tons of lead, 439 tons of nickel, 5,693 tons of tin, 25,665 tons of zinc, 64 tons of aluminum, and 3,821 tons of primary metals in 1949.

[2] Gross weight of secondary brass and bronze in commercial shapes. Includes 290,430 tons of copper, 3,052 tons of nickel, 4,137 tons of lead, 354 tons of tin, 118,338 tons of zinc, and 102 tons of aluminum in 1948; and 189,027 tons of copper, 2,187 tons of nickel, 3,053 tons of lead, 221 tons of tin, 70,800 tons of zinc, and 151 tons of aluminum in 1949.

[3] Gross weight of secondary metal in brass and bronze castings. Includes 107,323 tons of copper, 39 tons of nickel, 13,635 tons of lead, 5,441 tons of tin, 8,535 tons of zinc, and 119 tons of aluminum in 1948; and 78,059 tons of copper, 45 tons of nickel, 10,381 tons of lead, 4,045 tons of tin, 6,727 tons of zinc, and 162 tons of aluminum in 1949.

Consumption of old and new copper scrap in the United States in 1949, gross weight in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries: Brass mills		Manufacturers and foundries: Foundries and other manufacturers		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
No. 1 wire and heavy....	1/30,232	1/48,732	14,634	325	2,096	12,801	108,820
No. 2 wire, mixed heavy, and light..............	1/38,806	1/87,724	24,021	3,607	1,716	8,152	164,026
Composition or red brass	30,652	39,770	------	------	8,137	16,406	94,965
Railroad-car boxes......	------	220	------	------	------	48,742	48,962
Yellow brass...........	11,905	36,583	187,775	3,541	4,716	13,389	257,909
Cartridge cases.........	8	2,188	1,247	10,971	2	2,275	16,691
Auto radiators (unsweated)	------	19,981	------	------	------	------	19,981
Electrotype shells......	------	1,016	------	------	------	8	1,024
Bronze.................	3,486	17,172	1,048	------	13	7,415	29,134
Nickel silver...........	182	2,795	11,172	109	16	12	14,286
Low brass...............	1,368	69	16,694	343	685	1,351	20,510
Aluminum bronze.........	34	391	72	------	194	879	1,570
Low-grade scrap and residues..............	1/85,046	1/231,126	------	------	------	2,088	318,260
Total................	201,719	487,767	256,663	18,896	17,575	113,518	1,096,138

1/ Of the totals shown primary refiners reported the following: Unalloyed copper scrap 65,027 tons of new and 75,115 tons of old; and of low grade scrap and residues 61,852 tons of new and 213,504 tons of old.

Consumption of copper and brass materials by principal consuming groups in 1949 in short tons

Item consumed	Primary producers	Brass mills	Wire mills	Foundries & misc.	Secondary smelters
Copper-base scrap.......	415,499	275,559	-------	131,093	273,987
Primary material........	1/ 927,927	-------	-------	-------	-------
Refined copper..........	-------	478,126	677,223	21,808	4,463
Brass ingot.............	-------	632	2,204	201,339	-------
Slab zinc...............	-------	79,624	-------	-------	-------
Miscellaneous...........	-------	968	-------	-------	9,015

1/ Recoverable copper content; gross weight not available.

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UNITED STATES DEPARTMENT OF THE INTERIOR

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MINERAL MARKET REPORT
M.M.S. NO. 1892

SECONDARY LEAD IN 1949

Lead recovery in the secondary lead industry decreased in 1949 for the second successive year and totaled 412,183 tons valued at $130,249,828 compared with 500,071 tons valued at $179,025,418 reclaimed in 1948, a decrease of 18 percent in quantity and 27 percent in value. Recovery of lead from scrap, as metal and in alloys, did not exceed production of refined primary lead from domestic ores and base bullion as it had in the preceding 4 years, but was greater than domestic mine production for the 4th successive year.

For the 5th consecutive year more scrap went into the production of refined soft lead and less into antimonial lead. Production of refined soft lead by secondary smelters and primary plants that used scrap metal in addition to ores, concentrates, and base bullion, increased 16 percent, from 135,071 tons in 1948 to 156,910 tons in 1949, the secondary lead content being 131,903 and 152,626 tons, respectively. The secondary lead content of antimonial lead produced fell from 243,552 to 172,742 tons, a decrease of 29 percent. Secondary lead recovered in solder decreased for the first time in 4 years and lead reclaimed in type metals declined for the 3rd successive year. Recovery in lead-base babbitt dropped 36 percent. Total output of secondary lead and tin products was 17 percent lower than in 1948, less refined metal as well as less scrap metal being used in these products. Secondary smelters consumed 49,483 tons of primary lead, 9,953 tons of primary tin, 4,269 tons of primary antimony and 2,731 tons of other materials as alloying ingredients with scrap in making specification alloys in 1949 compared with 52,760 tons, 17,649 tons, 6,697 tons and 3,159 tons respectively in 1948.

Primary lead refineries recovered 14 percent or 56,852 tons of the total secondary lead recovered in 1949 in addition to 477,338 tons of refined lead produced from ores, concentrates and base bullion. Of the 56,852 tons reclaimed from secondary material 23,230 tons were in refined lead, 32,705 tons in antimonial lead and 917 tons in solder. The antimonial lead contained 3,385 tons of antimony of which 1,775 tons came from scrap and 1,610 tons was added as primary metal. Primary plants also recovered 465 tons of tin from scrap metal, all in solder.

Secondary smelters and manufacturers recovered 86 percent of the total secondary lead produced in 1949, 98 percent of the secondary tin and 90 percent of the secondary antimony. In comparison, 68 percent of the total secondary aluminum and 70 percent of the total secondary copper were recovered by plants other than primary producers and primary refineries. Comparison of data presented in the different sections of this chapter also indicate that the ratio of secondary lead recovered to primary lead produced was greater than the corresponding ratios for copper, aluminum and zinc. In other words the secondary lead recovered was greater in proportion to the total quantity of lead produced, both primary and secondary, than in the cases of secondary aluminum, copper and zinc.

Prepared by Archie J. McDermid and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division

Of the 412,183 tons of lead reclaimed in 1949, 392,332 tons were recovered from lead- and tin-base scrap, the remainder of 19,851 tons coming from copper-base scrap. A total of 1,284 tons of lead in lead- and tin-base scrap was added to brass and bronze to bring total recovery of secondary lead in copper-base alloys to 7,440 tons. Manufacturers and foundries recovered 97 percent of the lead scrap they consumed and the primary and secondary smelters reclaimed 77 percent of the scrap metal treated. The former group consumed 11 tons of battery lead plate scrap whereas the smelters used 316,031 tons. Recovery of metal from this material is comparatively low because most of the lead in the oxides adhering to the plates is lost in the smelting process.

A total of 537,341 tons of lead-base scrap was treated in 1949. This quantity was 17 percent under the 643,560 tons used in 1948 and 20 percent under the 671,282 tons consumed in the peak year of 1947. Treatment of battery-lead plates decreased 68,389 tons (18 percent), soft lead 18,984 tons (27 percent), antimonial lead 7,350 tons (35 percent), common babbitt 1,494 tons (8 percent), type metals 2,962 tons (17 percent), and drosses and residues 19,377 tons (22 percent). Increases in use of scrap over 1948 were 33 percent in the use of cable lead and 20 percent in solder scrap. Smelters' highest operations of the year were in January, September and March in that order and the lowest in July.

The year 1949 saw an unstable market in lead. Smelting charges per ton on battery plates had dropped to nothing near the end of 1948, advanced to a quoted $140 in March, gradually declined to $40 in July, rose again to $100 by October 1 and fell to $50 at the year's end. A second mild winter cut the demand for replacement batteries and lessened manufacturers demand for lead, and a shortage of copper due to strikes cut cable makers demand for lead for cable covering.

Percentage and remelt metals circulated among remelters, smelters and refiners in 1949 totaled 34,198 short tons, consisting of 3,700 tons of solder, 2,718 tons of lead-base babbitt, 9,638 tons of soft lead, 15,048 tons of antimonial lead, 1,389 tons of type metals, 1,118 tons of cable lead, 472 tons of tin-base babbitt, 98 tons of remelt tin and 17 tons of pewter.

Because of the downward trend in the lead market, smelters did not favor purchasing or holding large stocks of scrap, but cut inventories during the year 34 percent, from 70,984 to 46,754 tons. Stocks of unalloyed lead were 19 percent higher on December 31, but lead-base alloy scrap dropped 47 percent and drosses and residues 11 percent. Smelters' stocks of secondary pig metals also decreased during the year, from 29,900 to 27,053 tons.

Secondary lead recovered in the United States, 1948-49, in short tons

Secondary lead recovered		
Form of recovery	1948	1949
As metal:		
At primary plants	4,952	23,230
At other plants	126,951	129,396
Total	131,903	152,626
In antimonial lead 1/	243,552	172,742
In other lead alloys	102,603	78,894
In copper-base alloys	21,499	7,440
In tin-base alloys	514	481
Total	368,168	259,557
Grand total	500,071	412,183

Recoverable lead content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Lead-base	59,618	42,930
Copper-base	7,720	5,113
Total	67,338	48,043
Old scrap:		
Battery lead plates	256,193	210,611
All other lead-base	156,019	138,768
Copper-base	20,497	14,738
Tin-base	24	23
Total	432,733	364,140
Grand total	500,071	412,183

1/ Includes 49,525 tons of lead recovered in antimonial lead from secondary sources at primary plants in 1948 and 32,705 tons in 1949.

Consumption of old and new lead scrap in the United States in 1949, gross weight, in short tons

Scrap item	Remelters, smelters and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Soft lead	———	50,639	7	1,552	52,198
Hard lead	———	13,037	———	564	13,601
Cable lead	———	40,818	———	53	40,871
Battery-lead plates	———	316,031	———	11	316,042
Mixed common babbitt	———	7,067	29	11,166	18,262
Solder and tinny lead	———	11,738	1,173	267	13,178
Type metals	———	14,515	———	53	14,568
Dross and residues	68,620	———	———	1	68,621
Total	68,620	453,845	1,209	13,667	537,341

Shipments 1/ of secondary lead, tin, and lead- and tin-alloy products in the United States in 1949, gross weight, in short tons

Product	Gross weight of products 2/	Secondary metal content			
		Lead	Tin	Antimony	Copper
Refined pig lead	120,694	120,694	—	—	—
Remelt lead	35,002	31,518	—	—	—
Lead foil	1,214	414	—	—	—
Total	156,910	152,626	—	—	—
Refined pig tin	3,446	—	3,446	—	—
Remelt tin	229	—	106	—	—
Tin foil	19	—	—	—	—
Total	3,694	—	3,552	—	—
Lead and tin alloys:					
Antimonial lead	192,884	172,742	202	11,566	25
Common babbitt	26,267	19,782	1,148	2,231	151
Genuine babbitt	2,411	146	785	129	63
Other tin babbitts	1,203	335	299	55	18
Solder	61,785	31,884	7,762	421	4
Type metals	32,526	25,533	1,770	3,596	16
Miscellaneous lead-tin alloys	2,029	1,505	278	43	—
Total	319,105	251,927	12,244	18,041	277
Composition foil	275	190	65	20	—
Tin content of chemical products	608	—	608	—	—

1/ Most of the figures herein represent shipments rather than production of the items involved. However, it has been necessary to record actual production figures in some instances where the information is secured from reports on that basis.

2/ Difference between gross weight of products and secondary metal content represents added primary metals or impurity content.

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FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE.

SECONDARY MAGNESIUM IN 1949

Secondary magnesium (including alloying ingredients) recovered from scrap in 1949 totaled 5,962 short tons valued at $2,444,420, compared with 7,553 (revised) short tons valued at $3,096,730 (revised) in 1948. Primary production in 1949 was 11,598 tons, all from operations at the Freeport Texas, plant of Dow Chemical Company. Consumption of primary magnesium including pure magnesium and magnesium content of primary alloy totaled 11,947 tons compared with 9,698 (revised) tons in 1948.

Secondary magnesium recovered in aluminum alloys was 29 percent of that so reclaimed in 1948, because of decreased consumption of aircraft scrap, and that in magnesium castings was about half the quantity so recovered in 1948. Recovery from scrap made into anodes for cathodic protection was 105 tons greater in 1949 than in 1948. Although recovery of secondary magnesium in magnesium alloy ingot decreased 10 percent its ratio to total secondary recovery increased from 62 percent in 1948 to 71 percent in 1949.

Of the total quantity of magnesium recovered in secondary magnesium alloy ingot 2,278 tons were secondary ingot and 1,971 tons were incorporated in primary ingot. Consumption of secondary ingot, not including that incorporated in primary ingot, which cannot be measured, totaled 3,809 tons, including 1,502 tons in making castings, 359 tons in ribbon, stick and powder, 1,861 tons in aluminum alloys, 74 tons for cathodic protection, and 13 tons for miscellaneous uses.

Total consumption of magnesium scrap in 1949 was 6,458 tons, 18 percent less than in 1948 although use of primary magnesium, primary magnesium alloy and secondary magnesium ingot increased. Old scrap constituted 48 percent of the total used in 1949 as compared with 52 (revised) percent in 1948.

Prepared by Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Secondary magnesium recovered in the United States, 1948-49, in short tons

Secondary magnesium recovered		
Form of recovery	1948	1949
Magnesium-alloy ingot 1/ (gross weight)	2/4,713	4,249
Magnesium-alloy castings (gross weight)	1,301	681
Magnesium-alloy shapes	1	96
In aluminum alloys	2/ 998	294
In zinc alloys	6	4
Chemical and other destructive uses	84	83
Cathodic protection	450	555
Grand total	2/7,553	5,962

Recoverable magnesium-alloy content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Magnesium-base	2/3,365	3,023
Old scrap:		
Magnesium-base	2/3,771	2,837
Aluminum-base	417	102
Total	2/4,188	2,939
Grand total	2/7,553	5,962

1/ Figures include secondary magnesium incorporated in primary magnesium ingot.
2/ Revised figures.

Stocks and consumption of magnesium scrap in the United States in 1949, gross weight, in short tons

Scrap item	Stocks		Consumption during 1949
	Dec. 31, 1948	Dec. 31, 1949	
Cast scrap	1/ 2,654	1/ 2,113	3,426
Solid wrought scrap	898	737	2,776
Borings, grindings, drosses, etc	45	27	256
Total	1/ 3,597	1/ 2,877	6,458

1/ Revised figures.

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SECONDARY NICKEL IN 1949

The recovery of secondary nickel from nonferrous scrap in 1949 totaled 5,680 short tons, valued at \$4,877,984, a decrease of 36 percent in quantity from the 8,850 tons valued at \$6,966,720 recovered in 1948. The recovery declined because output of all the products in which nickel-bearing scrap is used decreased. Most of the recovery from copper-base nickel-bearing scrap and a large part of that from nickel-base alloy scrap was in the copper alloys nickel silver and cupro nickel. More nickel was recovered in brass mill shapes than in any other product-2,187 tons in 1949 and 3,052 tons in 1948. Nickel recovered from nickel-base scrap amounted to 2,569 tons in 1949 compared with 4,516 tons in 1948, and from copper-base scrap 2,440 tons in 1949 compared with 3,442 tons in 1948. Of the 1,201 tons of secondary nickel recovered in iron and steel in 1949, 1,060 tons was obtained from monel metal scrap and the remainder from unalloyed nickel scrap. Aside from that obtained from scrap the only production of nickel in the United States was as a byproduct from copper refining.

Consumption of nickel scrap totaled 18,160 tons in 1949 compared with 26,688 tons in 1948. The chief nickel-bearing scrap items are nickel silver, which is copper-base material and monel metal. Use of nickel silver from which most secondary nickel is obtained was 14,286 tons in 1949 and 20,145 tons in 1948. Consumption of monel scrap decreased from 5,014 tons in 1948 to 2,003 tons in 1949. Monel is a nickel-copper alloy that contains 67 percent nickel, 30 percent copper; the remainder is mostly iron and manganese. It is obtained by roasting copper-nickel converter matte and reducing the resulting oxide to metal with charcoal. 1/ Compositions of other monel metal types in commercial use vary a little from that given. Much stainless steel contains nickel and the 87,694 tons of stainless steel scrap which were consumed in 2/ 1949, probably contained several thousand tons, but tabulation of the secondary nickel recovered in the steel to which this scrap was added would be difficult because of the varying nickel content of the numerous types of stainless steel scrap used.

1/ Wickenden, T. H., The Nickel Industry: Metals Handbook, 1948 edition, pp 1025-1027.

2/ Melcher, Norwood B., and Larken, James E., United States Bureau of Mines Iron and Steel Report No. 110; December 1949, p 2.

Prepared by Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Secondary nickel (nonferrous) recovered in the United States, 1948-49, in short tons

Secondary nickel recovered			Recoverable nickel content of scrap		
Form of recovery	1948	1949	Kind of scrap processed	1948	1949
As metal	99	46	New scrap:		
In nickel-base alloys	1,850	1,062	Nickel-base	2,581	1,335
In copper-base alloys	3,467	2,438	Copper-base	2,875	1,958
In aluminum-base alloys	889	668	Aluminum-base	488	473
In lead-base alloys	6	21			
In cast iron & steel 1/	2,304	1,201	Total	5,944	3,766
In chemical compounds	235	244			
Grand total	8,850	5,680	Old scrap:		
			Nickel-base	1,935	1,234
			Copper-base	567	482
			Aluminum-base	398	193
			Lead-base	6	5
			Total	2,906	1,914
			Grand total	8,850	5,680

1/ Includes only nonferrous nickel scrap added to cast iron and steel.

Consumption of old and new nickel scrap in the United States in 1949, gross weight, in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Unalloyed nickel	91	196	22	101	410
Monel metal	221	913	1,510	359	3,003
Nickel silver 1/	182	2,795	11,188	121	14,286
Miscellaneous nickel alloys	51	——	——	——	51
Nickel residues	11	——	137	262	410
Total	556	3,904	12,857	843	18,160

1/ Copper-base scrap, and so tabulated, except in this table.

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SECONDARY TIN IN 1949

Recovery of secondary tin from scrap in 1949 totaled 24,901 short tons valued at $49,461,354 compared with 30,124 tons valued at $59,796,140 reclaimed in 1948. All of the secondary tin produced in 1949, except 465 tons recovered by primary lead refineries, was reclaimed by secondary smelters, detinners, manufacturers and foundries. All but a small percentage of the refined tin from ores and concentrates smelted in the United States was produced by the Government-owned smelter at Texas City where the output was 40,379 short tons.

Detinning plants produced 3,195 tons of pig tin from old tin cans and new tin plate clippings and 70 tons from tin base scrap and residues; in addition secondary smelters recovered 287 tons of pig tin. The total of 3,552 tons of unalloyed tin reclaimed from scrap was 1 percent above the quantity recovered in 1948. Recovery of all secondary tin, as metal, in alloys, and in compounds, decreased 17 percent. Increased recovery in solder, tin babbitt and chemical compounds was over-balanced by a 28 percent decline in lead-base alloys and a 34 percent drop in brass and bronze. Shipments of secondary tin and lead-tin alloys are presented in the Lead section of this chapter. In addition to metallic products secondary smelters produced, from lead- and tin-base scrap, tin salts with a recoverable tin content of 83 tons in 1949. These chemicals, tin stannate and tin tetrachloride, were shipped to detinning plants for further treatment.

The tin recovery table is double as are those in the sections devoted to the other nonferrous secondary metals. It shows secondary tin recovered according to composition on the left and according to class of scrap processed on the right side. The data on the left side are compiled from individual plant outputs and those on the right by calculating the tin that could be recovered from the quantities of the different kinds of scrap reported used. The totals so derived for each side of the table emerge different because of slight errors introduced by the necessity of assuming recovery factors. As presented here, however, the items have been adjusted to effect the exact balance theoretically to be expected. The word "recovery" thus may be applied to both sides of the table.

Consumption of tin-base scrap decreased 20 percent in 1949, when less of all types of scrap except pewter were consumed. Use of block tin pipe and high-tin babbitt dropped 18 and 8 percent, respectively, below the quantity treated in 1948.

Prepared by Archie J. McDermid and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

The price of primary tin held steadily at $1.03 a pound until September 28, when it dropped to 96 cents. Nine additional decreases occurred during the last three months and on December 31 the Reconstruction Finance Corporation selling price, New York, was 77.50 cents.

Continuation of General Preferance Order M-43 controlling the distribution and use of secondary as well as primary tin, was extended for another year on June 30. However, on August 25 when it appeared that supplies were adequate to meet the needs of industry and the strategic stockpile, restrictions on end-use were abolished, while allocation controls continued.

As in 1948, tin-base scrap exports exceeded domestic consumption, totaling 10,332 short tons in 1949 and 8,813 in 1948. They were largely drosses and residues, containing a number of metals with tin as the element of greatest value, and were consigned chiefly to Capper Pass and Son plants in England which have specialized in treating such material for many years.

Secondary tin recovered in the United States, 1948-49, in short tons

Secondary tin recovered		
Form of recovery	1948	1949
As metal:		
At detinning plants..	3,304	3,265
At other plants......	204	287
Total.............	3,508	3,552
In solder...............	7,404	7,762
In tin babbitt..........	1,040	1,084
In chemical compounds...	580	608
In lead-base alloys.....	4,810	3,463
In brass and bronze.....	12,782	8,432
Total...............	26,616	21,349
Grand total.......	30,124	24,901

Recoverable tin content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Tin plate...........	3,561	3,543
Tin-base............	1,281	854
Lead-base...........	1,970	1,926
Copper-base.........	3,222	2,055
Total..........	10,034	8,378
Old scrap:		
Tin cans..........	106	111
Tin-base..........	3,346	2,976
Lead-base.........	5,349	5,592
Copper-base.......	11,289	7,844
Total..........	20,090	16,523
Grand total...	30,124	24,901

Consumption of old and new tin scrap in the United States in 1949, gross weight, in short tons

Scrap item	Remelters, smelters, and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Block-tin pipe, scrap, and foil	——	819	8	61	888
Tin scruff and dross..........	1,380	——	3	——	1,383
No. 1 pewter..................	——	143	——	——	143
High-tin babbitt..............	——	2,271	——	96	2,367
Residues......................	36	——	——	4	40
Total	1,416	3,233	11	161	4,821

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SECONDARY ZINC IN 1949

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Secondary zinc recovered in 1949 from purchased scrap and residues totaled 237,813 short tons, with a value of $58,977,624, calculated at 12.4 cents a pound, the yearly average weighted price of all grades of refined zinc sold by producers. This tonnage was 27 percent lower than in 1948, when 324,639 tons with a value of $86,353,974 at 13.3 cents a pound were recovered. Output of primary slab zinc in 1949 totaled 814,782 tons compared with 787,764 tons in 1948.

Recovery of zinc from copper-base scrap declined 37 percent in 1949 because of decreased copper-base scrap consumption. Much of the 17 percent decrease in recovery of zinc from zinc-base scrap can be attributed to lower consumption of slab zinc in galvanizing and to still lower generation of scrap in galvanizing operations. In years such as 1949 when there is no oversupply of scrap material, consumption varies with availability. Galvanizers' dross, the chief zinc scrap item, forms in galvanizing pots as the result of the attack of the molten zinc on articles galvanized and on the walls of the pots. In the continuous galvanizing process, use of which has been increasing since the end of World War II, less dros is formed than when ordinary hot dip galvanizing method is used. The temperature and composition of the molten zinc bath can be better controlled when the continuous process is used. It was reported early in 1950 that seven continous lines wer then in operation with three more under construction. 1/ Installation costs are said to be high but labor savings and improvement in quality of product are compensating factors. Advantages claimed for an induction galvanizing furnace, place on the market in 1949, were reduced dross formation and longer life on account of its refractory lining. About 5 percent of all galvanizing in 1949 was done by electrical methods.

In intervals between wars the proportion of slab zinc used in brass and bronze tends to decrease and that used in galvanizing to increase and this tendenc is reflected in quantities of zinc recovered from different types of scrap. Recovery of zinc from copper-base scrap represented 42 percent of the total secondary recovery in 1949 as compared with 49 percent in 1948.

Secondary zinc reclaimed in brass and bronze, most of which came from brass scrap, was 36 percent less than in 1948. The total recovered as redistilled slab, in zinc dust, remelt zinc and zinc-base alloys dropped 15 percent. Recovery in chemical products declined 24 percent chiefly because of reduction in the quantity of secondary lithopone produced.

1/ White, F. G. Development in Galvanizing: American Metal Market Vol. 57, No 68, April 12, 1950, p 9

Prepared by Richard H. Mote and Archie J. McDermid, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

Producers of zinc dust and redistilled slab totaled 25 in 1949 as compared with 23 in 1948. A number of plants that had distilled zinc scrap in 1948 did not do so in 1949 and vice versa. Most zinc dust is made from scrap but one plant made this product entirely from primary material in 1949. There were 5 plants which made both zinc dust and redistilled slab, 6 which made zinc dust only and 14 which made slab only. Of the plants which reported using scrap in distillation operations 9 used chiefly primary raw materials whereas the other 16 were classed as secondary plants.

Total zinc-base scrap consumption decreased 18 percent in 1949. The only increase was 12 percent in use of scrap die castings. Aluminum and zinc die castings are competitive in many fields especially in the automobile industry. Data published by the Bureau of the Census in Facts for Industry bulletins indicate that shipments of aluminum die castings decreased 26 percent in 1949. Reports to the Bureau of Mines reveal that consumption of slab zinc in die castings decreased 14 percent in the same period, indicating a gain for zinc over aluminum.

Manufacturers and foundries consumed a total of 48,931 tons of zinc scrap in 1949, of which 5,053 tons were metallic scrap and 43,878 tons byproduct residues. Foundries consume very little zinc scrap. Most of the metallic scrap was used by die casters, brass mills, galvanizers and zinc rolling mills. The residues were consumed by chemical plants. The zinc in these materials is chiefly in oxide or chloride form, easily soluble, or already in the chemical combination desired. Zinc oxide can be produced by chemical processes as in the manufacture of sodium hydrosulfite or in smelting operations such as roasting metallic zinc scrap or zinc ore. More zinc oxide is made from primary materials than from scrap but the other zinc chemicals, except lithopone, are made chiefly from scrap and residues.

Smelters recovered 71 percent, and manufacturers and foundries 61 percent, of the zinc contained in the scrap treated. These recoveries are relatively low, not because of inefficient operation of plants but because so much of the scrap treated was byproduct residues containing a low percentage of zinc. Chemical plants reclaim virtually all of the zinc contained in residues because there is no melting loss in chemical reactions whereas in smelting operations some metal is lost in skimmings and flue dust.

Secondary zinc recovered 1/ in the United States, 1948-49, in short tons

Secondary zinc recovered		
Form of recovery	1948	1949
As metal:		
By distillation:		
Slab zinc	59,109	54,559
Zinc dust	29,457	20,895
By remelting	10,988	8,722
Total	99,554	84,176
In zinc-base alloys	12,884	11,216
In brass and bronze	162,384	104,386
In aluminum-base alloys	822	611
In chemical products:		
Zinc oxide (lead free)	12,327	12,394
Zinc sulfate	3,758	4,418
Zinc chloride	13,980	11,366
Lithopone	18,213	8,588
Miscellaneous	717	658
Total	225,085	153,637
Grand total	324,639	237,813

Recoverable zinc content of scrap		
Kind of scrap processed	1948	1949
New scrap:		
Zinc-base	139,673	112,177
Copper-base	110,288	73,531
Aluminum-base	488	454
Total	250,449	186,162
Old scrap:		
Zinc-base	26,199	25,002
Copper-base	47,663	26,496
Aluminum-base	328	153
Total	74,190	51,651
Grand total	324,639	237,813

1/ Zinc content.

Production of secondary zinc and zinc-alloy products in the United States, 1945-49, gross weight in short tons

Products	1945	1946	1947	1948	1949
Redistilled slab zinc	49,242	44,516	59,542	59,679	55,041
Zinc dust	23,892	26,002	28,334	29,932	21,243
Remelt spelter 1/	8,090	8,212	7,443	7,796	6,045
Remelt die-cast slab	4,727	7,829	8,595	10,543	8,266
Zinc-die and die-casting alloys	2,281	3,002	2,698	3,377	3,873
Galvanizing stock	701	876	774	580	406
Rolled zinc	3,054	2,729	2,341	2,778	2,775
Secondary zinc in chemical products	41,866	45,029	55,525	48,995	37,424

1/ Contains small tonnages of bars, anodes, etc.

Consumption of old and new zinc scrap in the United States in 1949, gross weight, in short tons

Scrap item	Remelters, smelters and refiners		Manufacturers and foundries		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	
Clippings	3,737	——	3,925	——	7,662
Sheet and strip	——	4,333	——	101	4,434
Engravers' plates	——	1,304	——	87	1,391
Skimmings and ashes	47,154	——	28,616	——	75,770
Dross	55,258	——	3	——	55,261
Die castings	——	22,789	611	329	23,729
Rod and die scrap	——	1,712	——	——	1,712
Flue dust	5,129	——	8,831	——	13,960
Chemical residues	10,530	——	6,428	——	16,958
Total	121,808	30,138	48,414	517	200,877

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE **AUGUST 7, 1950.**

MINERAL MARKET REPORT
MMS NO. 1898

FIRE CLAY PRODUCTION IN 1949

Fire clay sold or used by producers in the United States in 1949 decreased 13 percent to 8,571,844 tons, according to reports to the Bureau of Mines, United States Department of the Interior. This decrease was due in part to a general decline in industrial demand for refractories and in part to work stoppages in the coal and steel industries. Of the 17 principal fire-clay producing States, 7 (Arkansas, Colorado, Indiana, Maryland, Tennessee, Utah, and Washington) reported increases; the remaining 10 States, as given in the following table, reported decreases.

The two major uses of fire clay are in refractories (4,811,099 tons in 1949) and heavy clay products (3,430,723 tons) - 96 percent of the total tonnage. Refractories decreased 20 percent in 1949 compared with 1948, but heavy clay products showed very little change, with a decrease of only 1 percent. The principal use of fire clay is in the manufacture of fire-brick and block, which in 1949 consumed 3,754,420 short tons. Increased use of fire clay was reported for pottery and stoneware, rubber, linoleum, high-alumina brick, clay crucibles, and glass refractories.

Ohio, as usual, ranked first in order of fire clay output; Pennsylvania, second; Missouri, third; Indiana, fourth; Kentucky, fifth, and California, sixth.

The sales value of crude fire clay varies considerably according to the location of the deposit, and the type and quality of the clay. The average value of the fire clay sold or used (crude and prepared) in 1949 was $2.91 compared with $2.90 in 1948.

The accompanying table shows the output of fire clay in the United States in 1948 and 1949, and lists the producing States.

Prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

Fire clay, including stoneware clay 1/ sold or used by producers in the United States, 1948-49, by States

State	1948		1949	
	short tons	Value	Short tons	Value
Alabama	170,789	$346,526	122,052	$246,112
Arkansas	273,540	909,376	276,245	897,917
California	547,330	1,312,430	362,492	788,674
Colorado	166,489	368,926	174,981	421,344
Illinois	399,206	1,183,378	355,963	1,083,765
Indiana	318,097	586,713	379,677	656,829
Kentucky	516,169	2,210,342	373,637	1,727,056
Maryland	134,804	548,000	153,089	491,977
Missouri 2/	1,496,763	4,823,882	1,201,148	3,739,942
New Jersey	332,765	1,310,703	237,439	996,113
Ohio	2,786,509	6,558,656	2,506,306	6,171,413
Pennsylvania . . .	1,871,687	7,303,153	1,663,564	6,316,196
Tennessee	30,148	174,695	41,732	205,770
Texas	259,128	590,420	243,373	537,144
Utah	26,363	76,279	31,985	91,499
Washington	82,100	142,132	85,316	167,624
West Virginia . . .	314,084	756,627	239,373	586,237
Other States 3/ . .	123,943	216,796	123,472	232,891
	9,849,914	29,424,034	8,571,844	25,358,503

1/ Includes stoneware clay as follows: 1948 - 143,701 tons, $321,062; 1949 - 103,417 tons, $224,113.

2/ Includes diaspore and burley clay as follows: 1948 - diaspore, 52,255 tons, $565,163; burley, 38,393 tons, $225,003; 1949 - diaspore, 35,359 tons, $398,885; burley, 32,432 tons, $204,850.

3/ Includes other producing States as follows: Alaska (1948 only), Delaware, Idaho, Iowa, Kansas, Massachusetts, Michigan (1949 only), Minnesota, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Carolina, and Virginia.

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UNITED STATES DEPARTMENT OF THE INTERIOR

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OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR IMMEDIATE RELEASE AUGUST 4, 1950. MINERAL MARKET REPORT
MMS NO. 1899

AUG 7 1950

BARITE AND BARIUM CHEMICALS IN 1949

Domestic mine production of 731,308 short tons of primary barite during 1949 was the third greatest annual output on record, being surpassed only in 1947 and 1948, according to reports by producers to the Bureau of Mines, United States Department of the Interior. Arkansas, the leading State, produced almost half of the United States total and nearly twice as much as the second leading State, Missouri. Georgia and Tennessee production continued to decrease rapidly. New production was reported from New Mexico and South Carolina.

Total barite consumed in the United States during 1949 (719,543 short tons) was the lowest in several years. Sales of ground barite for use in well drilling muds were least affected. The greatest decrease in consumption was in lithopone.

Salient statistics of the barite and barium-chemical industries in the United States, 1946-1949

	1946	1947	1948	1949
Barite:				
Primary:				
Produced............short tons	725,223	884,219	777,841	731,308
Sold or used by producers:				
Short tons..................	724,362	834,082	799,848	717,313
Value.......................	$5,242,755	$6,171,342	$6,693,413	$5,642,226
Imports for consumption:				
Short tons..................	44,662	53,222	53,204	26,178
Value.......................	$274,267	$378,294	$443,515	$192,567
Consumption......... short tons	722,073	835,818	894,309	719,543
Ground and crushed sold by producers:				
Short tons..................	455,240	549,965	631,424	554,028
Value.......................	$7,208,193	$8,979,400	$11,195,365	$10,156,590
Barium chemicals sold by producers:				
Short tons..................	80,871	72,919	71,717	56,792
Value.......................	$7,003,756	$7,035,104	$7,028,058	$5,646,403
Lithopone sold or used by producers:				
Short tons..................	147,001	165,024	140,033	78,335
Value.......................	$11,840,596	$17,382,592	$16,135,976	$8,977,178

Prepared by Joseph C. Arundale and F. M. Barsigian, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

(Over)

Domestic barite sold or used by producers in the United States in 1948-49, by States

State	1947		1948	
	Short tons	Value	Short tons	Value
Arkansas 1/	362,470	$2,899,760	363,382	$2,907,056
Georgia	62,781	654,959	50,267	465,325
Missouri	278,071	2,413,802	186,891	1,497,985
Nevada	(2/)	(2/)	70,576	416,416
Tennessee	25,818	275,242	13,376	137,120
Other States 3/	70,708	449,650	32,821	218,324
Total	799,848	6,693,413	717,313	5,642,226

1/ Value estimated.
2/ Included with "Other States."
3/ 1948: Arizona, California, and Nevada; 1949: Arizona, California, Idaho, New Mexico, and South Carolina.

In the accompanying table, figures for consumption of ground barite in "Paint," "Rubber," and "Undistributed" have been estimated partly by the grinders and partly by the Bureau of Mines.

Ground (and crushed) barite sold by producers, 1947-49, by consuming industries

Industry	1947	1948	1949
	Short tons	Short tons	Short tons
Well drilling	467,350	565,249	494,579
Paint	29,000	22,000	20,000
Glass	33,641	23,580	21,768
Rubber	17,000	18,000	14,000
Undistributed	2,974	2,595	3,681
	549,965	631,424	554,028

Distribution of lithopone shipments, by industries, 1947-49, in short tons

Industry	1947		1948		1949	
	Short tons	Percent of total	Short tons	Percent of total	Short tons	Percent of total
Paints, varnishes, and lacquers 1/....	134,830	82	104,441	75	56,146	72
Floor coverings	9,048	6	12,423	9	6,380	8
Coated fabrics and textiles	8,421	5	8,436	6	6,602	8
Paper	4,069	2	4,814	3	2,375	3
Rubber	3,085	2	4,192	3	3,245	4
Other	5,571	3	5,727	4	3,587	5
Total	165,024	100	140,033	100	78,335	100

1/ Includes a quantity, not separable, used for printing ink.

Barium chemicals produced and used or sold by producers in the United States, 1948-49, in short tons

Chemical	Plants	Produced	Used by producers 1/ in other barium chemicals 2/	Sold by producers 3/	
				Short tons	Value
Black ash: 4/					
1948	16	152,383	151,509	459	$31,442
1949	15	97,673	97,753	246	16,464
Carbonate (synthetic):					
1948	5	43,227	16,588	27,482	1,927,599
1949	4	36,122	10,077	27,010	1,942,845
Chloride (100 percent basis):					
1948	4	14,244	4,432	8,998	964,311
1949	3	11,604	3,739	7,549	848,637
Hydroxide:					
1948	4	5,030	92	4,849	809,589
1949	4	3,849	140	3,737	694,097
Oxide:					
1948	3	7,247	6,449	577	127,716
1949	3	5,795	4,899	1,118	233,733
Sulfate (synthetic):					
1948	7	22,733	(5/)	(5/)	(5/)
1949	7	15,182	-------	15,371	1,436,557
Other barium chemicals: 6/					
1948	(7/)	13,469	8/ 15,443	8/ 29,352	8/3,167,401
1949	(7/)	5,320	2,890	1,761	474,070
Total: 9/					
1948	20	-------	-------	71,717	7,028,058
1949	20	-------	-------	56,792	5,646,403

1/ Of any barium chemical.
2/ Includes purchased material.
3/ Exclusive of purchased material and exclusive of sales by one producer to another.
4/ Black-ash data include lithopone plants.
5/ Included under "Other barium chemicals."
6/ Consists mostly of titanium dioxide-barium sulfate pigments (except 1949), with small quantities of barium acetate, chromate, nitrate, perchlorate, peroxide, and sulfide. Specific chemicals may not be revealed by specific years.
7/ Plants included in above figures.
8/ Also includes barium sulfate (synthetic).
9/ A plant producing more than 1 product is counted but once in arriving at grand totals.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

For immediate release

MINERAL MARKET REPORT
M. M. S. NO. 1900

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

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LEAD INDUSTRY IN 1949

The transition in lead supply from insufficiency to abundance accompanied by falling prices highlighted the domestic lead industry in 1949, according to the Bureau of Mines, United States Department of the Interior. Noteworthy also was the consumers' cautions buying and general lack of confidence in price stability which resulted in purchases of quantities substantially smaller than actual needs and an 18-percent reduction in consumers' inventories during the year. Some stability was rendered the lead market by the Government through purchase during the year of substantial tonnages of pig lead for the strategic stockpile. Contributing to the expanded supply was the high level of imports prevailing in 1949 which resulted in an accumulation of nearly 400,000 tons of lead from foreign sources, the largest annual tonnage imported in the peacetime history of the United States.

Although labor strikes continued to exact a toll on output of lead at both mines and smelters the total loss of production was not as great as in 1948. Total mine output advanced 5 percent in 1949 and production of refined lead at primary refineries rose 22 percent to the highest level since 1942. Lead from secondary sources continued for the fourth year to be a greater source of supply than production from domestic mines.

Overall consumption of primary, antimonial, and secondary lead in the United States in 1949 declined 16 percent from 1948.

Production. - Domestic mine output of recoverable lead rose 5 percent in 1949 compared with 1948 and was the largest since 1944. This gain reflected the response to the incentive of high market prices during the early part of the year and also fewer interruptions in operation due to labor-management disputes such as the strike which shut down the large lead mines in Southeastern Missouri for 2½ months in 1948 at an estimated loss of 25,000 tons of lead. A downward trend in lead price which began in March and continued through May resulted in some mine closings and reduced work weeks at most large lead-producing properties but failed to offset completely the net gain in output recorded during the early part of 1949. Except for January, production during the first half of the year was at a rate consistently in excess of the 1,123-ton average daily output for the entire year. Production during the latter half of the year, however, fell off sharply and the daily output through November remained below the annual average. The daily production rate in

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Prepared by Richard H. Mote and Edith E. den Hartog, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

December was 21 percent above the low point of the year, reached in July, but was only 90 percent of the March rate, which was highest for the year.

Production in 11 of the 22 lead-producing States in 1949 exceeded the rates established in 1948 and in some instances record and near-record high outputs were recorded. In Arizona the production was far greater than in any other year in the State's mining history, and not since 1917 have California mines produced as much lead as was recovered in 1949. Colorado lead output reached the highest point since 1927 and in Nevada the 1949 production was larger than any year since 1936. Similar but less spectacular records were established in the Mid-Continent region where Oklahoma lead output exceeded that of every year since 1942; Kansas production hit an eight-year high; and Missouri mines closely approached the 1947 output.

Of the total lead produced at United States mines in 1949, 66 percent came from the output of 25 properties. Missouri continued to rank first among the States in the production of lead, and the Southeastern Missouri district continued to be the largest lead-producing area, supplying 31 percent of the total domestic output.

Mine production of recoverable lead in the United States, 1948-49, by States, in short tons

State	1948	1949
Western States and Alaska:		
Alaska	329	51
Arizona	29,899	33,568
California	9,110	10,318
Colorado	25,143	26,853
Idaho	88,544	79,299
Montana	18,411	17,996
Nevada	9,777	10,626
New Mexico	7,653	4,652
Oregon	7	12
South Dakota	16	4
Texas	170	132
Utah	55,950	53,072
Washington	7,147	6,417
Wyoming	-------	-------
Total	252,156	243,000
West Central States:		
Arkansas	22	1
Kansas	8,386	9,772
Missouri	102,288	127,522
Oklahoma	16,918	19,858
Total	127,614	157,153
States East of the Mississippi River:		
Illinois	3,695	3,824
Kentucky	216	187
New York	1,231	1,317
Tennessee	-------	257
Virginia	4,703	3,313
Wisconsin	861	857
Total	10,706	9,755
Grand total	390,476	409,908

Primary refineries in the United States in 1949 produced 500,568 short tons of refined lead, an increase of 22 percent over the 1948 output of 411,646 tons.

Of the 477,338 tons of primary lead produced in 1949, domestic ores and base bullion supplied 85 percent and foreign ores and imported base bullion 15 percent. In 1948 the origin was 83 percent domestic and 17 percent foreign.

The average antimony content of antimonial lead in 1949 advanced to 8.2 percent, the highest average content recorded since 1941. Although antimonial lead is an important byproduct of the refining of base bullion, the quantity derived from this source is only a small part of the annual domestic output. The major production is recovered from the smelting of antimonial lead scrap at secondary smelters. The distribution of lead, according to source, is shown in the following table.

Refined lead produced at primary refineries in the United States, by sources, 1948-49, in short tons

	1948	1949
Refined lead:		
From domestic ores and base bullion............	339,413	404,449
From foreign ores..............................	60,829	71,413
From foreign base bullion......................	6,452	1,476
Total from primary sources.....................	406,694	477,338
From scrap.....................................	4,952	23,230
Total refined lead.............................	411,646	500,568
Average sales price per pound..................	$0.179	$0.158
Total calculated value of primary refined lead 1/.	$145,600,000	$150,839,000

1/ Excludes value of refined lead produced from scrap at primary refineries.

Secondary lead recovery in 1949 surpassed the domestic mine output of recoverable lead for the fourth successive year. Recovery at primary and other plants in 1948-49 is shown in the following table.

Secondary lead recovered in the United States, 1948-49, in short tons

	1948	1949
As refined metal:		
At primary plants..............................	4,952	23,230
At other plants................................	126,951	129,396
Total..	131,903	152,626
In antimonial lead:		
At primary plants..............................	49,525	32,705
At other plants................................	194,027	140,037
Total..	243,552	172,742
In other alloys................................	124,616	86,815
Grand total....................................	500,071	412,183
Value..	$179,025,418	$130,249,828

Consumption. - Domestic lead consumption (including lead in lead ore used directly in the manufacture of lead pigments and salts) totaled 957,674 short tons in 1949. Of the total consumed, 592,682 tons were refined soft lead, 227,221 tons antimonial lead, 50,922 tons unmelted white scrap, 46,268 tons percentage metals, 15,976 tons copper-base scrap, 15,215 tons drosses and residues, and 9,390 tons from lead ores used directly in the manufacture of lead compounds. During the year 77 percent of the total lead consumed was used in the manufacture of metal products. Production of the three largest lead-consuming items--batteries, cable covering, and tetraethyl fluid--used nearly 58 percent of all the lead consumed in 1949. Batteries took 33 percent of the total, cable covering 15 percent, and tetraethyl fluid 10 percent.

Consumption of lead in the United States in
1948-49, in short tons

	1948	1949
Metal Products:		
Ammunition	49,635	24,111
Bearing metals	42,594	29,189
Brass and bronze	23,239	14,946
Cable covering	171,654	144,340
Calking lead	31,473	34,944
Casting metals	8,974	12,672
Collapsible tubes	11,071	8,692
Foil	3,203	2,503
Pipes, traps, and bends	39,843	29,858
Sheet lead	31,559	27,144
Solder	71,025	62,104
Storage batteries (antimonial lead)	203,869	175,308
Storage batteries (oxides)	150,536	138,410
Terne metal	3,278	3,256
Type metal	26,279	20,695
Total	868,232	728,172
Pigments:		
White lead	30,970	18,400
Red lead and litharge	80,356	70,832
Pigment colors	10,832	8,400
Other 1/	20,230	9,515
Total	142,388	107,147
Chemicals:		
Tetraethyl lead	83,809	94,644
Miscellaneous chemicals	10,280	4,191
Total	94,089	98,835
Miscellaneous Uses:		
Annealing	6,132	4,935
Galvanizing	1,995	1,228
Lead plating	2,274	997
Weights and ballast	6,290	4,627
Total	16,691	11,787
Other Uses Unclassified	12,495	11,733
Total consumed	1,133,895	957,674

1/ Includes lead content of leaded zinc oxide production.

Lead consumption in the United States in 1949
by class of products and type of material
in short tons

	Soft and antimonial lead	Scrap, percentage metal, drosses, etc.	Total
Metal products..........	600,925	127,247	728,172
Pigments...............	97,756	1	97,757
Chemicals..............	98,835	-------	98,335
Miscellaneous..........	11,361	426	11,787
Unclassified...........	11,026	707	11,733
Total..............	819,903	128,381	1/ 948,284

1/ Excludes 9,390 tons of lead contained in leaded zinc oxide.

Stocks. - The Bureau of Mines annual survey of primary lead smelters and refiners indicated stocks of 29,048 tons (lead content) of refined lead at plants on January 1, 1949, and 60,826 tons on December 31, 1949. Primary antimonial lead stocks at these same plants decreased from 9,258 short tons (lead content) at the beginning of 1949 to 8,192 tons at the end of the year. Consumers' stocks of lead decreased 18 percent during 1949. Inventories of refined lead gained 4 percent but antimonial lead dropped 52 percent from the January 1 level. Consumers' total stocks, which on January 1, 1949 were 119,198 tons, advanced to 136,855 tons on March 31 and thereafter declined steadily to 97,267 tons on December 31.

Stocks of lead held at primary smelters and refineries
at the end of the year, 1948-49, lead content, in short tons

	Refined lead	Antimonial lead	In ore, concentrates, etc. 1/	In base bullion 1/
Dec. 31, 1948......	29,050	9,594	44,038	9,697
Dec. 31, 1949......	61,329	9,095	61,736	16,364

1/ Excludes material in process.

Consumers' stocks of lead at the end of 1948 and 1949,
by types of materials, in short tons

Date	Refined soft lead	Antimonial lead	Unmelted white scrap	Percentage metals	Copper-base scrap	Drosses, residues, etc.	Total
Dec. 31, 1948	62,077	35,088	4,828	7,932	2,301	6,972	119,198
Dec. 31, 1949	64,542	16,337	2,957	5,405	2,087	5,439	97,267

Prices. - The market price for common lead, New York, was quoted at 21.50 cents a pound until March 9 when it dropped to 19.50 cents. A series of price reductions followed thereafter until the quotation reached a low of 12.00 cents on May 26. A one-cent increase occurred on July 8 and several additional increases established the quotation at 15-1/8 cents on August 8. The price trended downward beginning September 26 and leveled off at 12.00 cents on November 21, at which point it remained the balance of the year.

Foreign trade. - Total imports of lead increased in 1949 to a record peacetime high but remained well below the wartime peak level established in 1942. As in previous years the greater part of the lead imported was in the form of pigs and bars; 46 percent of which came from Mexico, 20 percent from Canada, 13 percent from Peru, 9 from Yugoslavia, 6 percent from Australia, and 6 percent from 17 other countries. Imports of lead in base bullion, virtually all from Australia, were approximately one-third the quantity imported in 1948. Receipts of lead in ore, concentrate, and matte, principally from Africa, Bolivia, Peru, Australia, Newfoundland, and Mexico, were the largest since 1940.

Total exports of pig lead (excluding re-exports of foreign refined lead) increased from 411 tons (revised figures) in 1948 to 969 tons in 1949. Export restrictions imposed under the Export Control Act of 1940 remained in force throughout 1949.

Imports and exports of lead in 1948 and 1949 1/,
in short tons

	1948	1949
Imports (general 2/):		
In ore and matte	63,907	107,279
In base bullion	7,186	2,373
Pigs and bars	3/ 247,116	275,240
In reclaimed, scrap, etc	3/ 28,897	14,649
Imports (for consumption 4/):		
In ores, flue dust and matte	33,932	121,848
In base bullion	10,922	1,133
Pigs and bars	3/ 244,692	272,437
Sheets, pipe, and shot	181	168
In babbitt, solder, white metal, etc	184	129
In type metal and antimonial lead	3/ 13,163	5,207
Exports:		
Pigs and bars	3/ 411	969
Foreign lead re-exported	------	------

1/ Figures on imports and exports compiled from records of the United States Department of Commerce.

2/ General imports include material imported for immediate consumption plus material entering country under bond.

3/ Revised figure.

4/ Imports for consumption include material for which duty has been paid irrespective of the actual date of importation.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE AUGUST 17, 1950.

MINERAL MARKET REPORT
MMS NO. 1901

TALC, PYROPHYLLITE, AND GROUND SOAPSTONE INDUSTRIES OF THE UNITED STATES IN 1949 1/

GENERAL CONDITIONS

Mine production of talc, pyrophyllite, and ground soapstone, and the quantity and value of these commodities sold or used, all decreased in 1949, according to reports by producers to the Bureau of Mines, United States Department of the Interior. Total imports were slightly higher in quantity in 1949 than in 1948, and considerably higher in value. Exports of "talc, steatite, soapstone, and pyrophyllite, crude and ground," decreased in quantity and increased in value. Exports of "powders-talcum (in packages), face, and compact" were again cut sharply, decreasing from \$2,228,956 in 1948 to \$1,633,046 in 1949.

Eleven States reported sales of talc, pyrophyllite, or ground soapstone in 1949, the same as in 1948. In 1949 New York was still the leading producer by a large margin. North Carolina was second and California third. Sales of all the listed States except Nevada were lower in 1949 than in 1948. Sales of pyrophyllite, most of which comes from North Carolina, decreased markedly.

1/ Soapstone sold in slabs or blocks is not included.

Prepared by Bertrand L. Johnson and F. M. Barsigian, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

Salient statistics of the talc, pyrophyllite, and ground-soapstone industries in the United States, 1948-49

	1948		1949	
	Short tons	Value	Short tons	Value
Mined 1/	528,543	(2/)	459,345	(2/)
Used by producers	481,424	(2/)	415,575	(2/)
Sold by producers:				
Crude 1/	49,124	$408,186	49,706	$435,571
Sawed and manufactured	920	227,963	636	253,704
Ground	468,702	7,629,214	3/ 411,554	3/ 6,834,203
Total sales	518,746	8,265,363	461,896	7,523,478
Imports for consumption: 4/				
Crude and unground	85	4,835	58	8,267
Cut and sawed	98	29,133	110	31,786
Ground, washed, or pulverized.	18,194	484,857	18,648	537,061
Total imports	18,377	518,825	18,816	577,114
Exports:				
Talc, steatite, soapstone, and pyrophyllite, crude & ground.	16,327	432,176	5/15,841	5/ 440,141
Powders - talcum (in packages), face, and compact	(2/)	2,228,956	(2/)	1,633,046
Total exports	-------	2,661,132	--------	2,073,187

1/ Includes pinite; none in 1949.
2/ Figure not available.
3/ Includes a small quantity of crushed material.
4/ Exclusive of "Manufactures, n.s.p.f., except toilet preparations," as follows: 1948: $14,772; 1949: $9,012. Quantities not available.
5/ Includes manufactures, n.e.s.

SALES

The quantity of domestic talc, pyrophyllite, and ground soapstone sold or used in 1949 (461,896 short tons, valued at $7,523,478) was much less in both quantity and value, than in 1948 or in 1947, according to reports of the producers to the Bureau of Mines, and the 1948 figures remain the all-time highs. The average value per ton rose from $15.93 in 1948 to $16.29 in 1949, an increase of 36 cents per ton.

Talc, pyrophyllite, and ground soapstone, sold by producers in the United States, 1948-49, by States

State	1948		1949	
	Short tons	Value	Short tons	Value
California	98,681	$1,773,764	83,359	$1,434,046
Georgia	53,602	624,694	49,338	580,405
Maryland and Virginia	40,276	341,875	32,256	268,423
Nevada 1/......................	8,019	107,730	8,837	147,148
New York	119,716	2,613,935	115,636	2,658,774
North Carolina	104,052	1,455,691	86,208	1,344,767
Vermont	70,922	1,014,718	64,508	788,341
Other States 2/................	23,478	332,956	21,754	301,574
Total	518,746	8,265,363	461,896	7,523,478

1/ Includes pinite; no sales in 1949.

2/ Montana, Texas, and Washington.

Pyrophyllite 1/ produced and sold by producers in the United States, 1945-49

Year	Production (short tons)	Sales					
		Crude		Ground		Total	
		Short tons	Value	Short tons	Value	Short tons	Value
1945..	77,716	6,215	$38,166	71,379	$613,034	77,594	$651,200
1946..	97,765	10,716	85,002	85,835	913,301	96,551	998,303
1947..	108,450	6,204	27,626	97,536	1,135,100	103,740	1,162,726
1948..	107,885	5,175	25,766	102,152	1,313,266	107,327	1,339,032
1949..	90,920	5,927	31,489	82,934	1,070,838	88,861	1,102,327

1/ Exclusive of pinite.

MARKETS

Six industries - paint, ceramics, rubber, insecticides, roofing, and paper consumed 82 percent of the sales of domestically produced talc, pyrophyllite, and ground soapstone in 1949, according to reports from the producers. Decreases were reported in all of these leading industries from 1948. Sales for the minor uses listed - toilet preparations, foundry facings, and crayons showed increases. The paint industry was the leading consumer with 22 percent of the total; ceramics, with 20 percent, was second.

Talc, pyrophyllite, and ground soapstone sold by producers in the United States, 1948-49, by uses 1/

Use	1948		1949	
	Short tons	Percent of total	Short tons	Percent of total
Paint	108,505	21	100,097	22
Ceramics	107,907	21	94,665	20
Rubber	66,226	13	53,414	12
Insecticides	72,740	14	59,393	13
Roofing	54,990	11	44,184	10
Paper	32,430	6	25,294	5
Toilet preparations	7,431	1	8,429	2
Foundry facings	6,764	1	6,986	1
Crayons	400	(2/)	561	(2/)
Other uses 3/	37,995	7	47,277	10
Unclassified	23,358	5	21,596	5
Total	518,746	100	461,896	100

1/ Partly estimated. Includes pinite (none in 1949).
2/ Less than 0.5 percent.
3/ Refractory, textile, asphalt filler, plaster, plastics, and miscellaneous other uses.

Interior - Duplicating Section, Washington, D.C.

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FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

For immediate release

MINERAL MARKET REPORT
M. M. S. NO. 1902

PRODUCTION OF ROLLED ZINC IN 1949

The quantity of slab zinc consumed for rolled products in 1949 decreased 28 percent from the 1948 figure, according to the Bureau of Mines, United States Department of the Interior. The total value of the rolled products decreased 29 percent as the average price dropped from $0.183 in 1948 to $0.174 in 1949.

Output of rolled zinc in 1949 was 57,987 tons valued at $20,144,422 compared with 77,669 tons valued at $28,434,677 in 1948. Production of foil, rod and wire increased 11 percent to 1,166 tons in 1949 whereas output of all other rolled items decreased sharply. Of the 57,987 tons of rolled zinc produced, 71 percent or 41,354 tons was in the form of strip and ribbon zinc.

During 1949 zinc rolling mills reported the consumption of 55,200 tons of slab zinc and 3,802 tons of purchased zinc scrap compared with 76,672 tons of slab zinc and 3,689 tons of zinc scrap in 1948. In addition, 8,977 tons of strip and ribbon zinc were remelted and rerolled from scrap originating in fabricating plants operating in connection with zinc rolling mills.

The following grades of slab zinc were used:

	Short tons	
	1948	1949
Special High Grade	3,180	2,871
Regular High Grade	34,230	21,763
Intermediate	17,704	15,320
Brass Special	20,175	13,017
Prime Western	1,383	2,229
	76,672	55,200

Inventories of slab zinc on hand at rolling mills were 5,983 tons at the beginning and 5,039 tons at the end of 1949. Stocks of rolled zinc were 4,123 tons on December 31, 1949 compared with 4,120 tons (revised) on the same date in 1948.

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Prepared by Richard H. Mote, under the supervision of Charles Whit
Base Metals Branch, Minerals Division.

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During 1949, 19 primary zinc-reduction plants were in operation, of which 10 operated with horizontal retorts exclusively, 1 with both horizontal and vertical retorts, 3 with vertical retorts exclusively (1 electrothermic), and 5 with electrolytic methods.

During the year a new block of furnaces was added at the National Zinc Co. Bartlesville plant. The new unit constructed during the first half of the year and put into operation in June, contains 832 retorts and is designed to handle 50 tons of sintered zinc material per 48-hour cycle. Improvement in metallurgical techniques at other horizontal retort plants was evidenced by progress in mechanical charging of retorts at the Amarillo, Texas plant of the American Smelting & Refining Co. and the installation of a new rod mill at the Dumas, Texas plant of the American Zinc Co. of Illinois.

Consumption and uses. - According to reports from 610 plants, 711,841 tons of slab zinc were put in process in 1949, a 13-percent drop from the 1948 total. Galvanizing continued to be the largest field of zinc use although the quantity consumed was less than the record peak consumption in 1948 owing to the labor strike which occurred within the steel industry during the latter part of 1949. Zinc-base alloys, largely die castings, continued as the second largest use of slab zinc, but, as in galvanizing, the quantity consumed in 1949 fell short of equalling the record high established in 1948. Consumption of slab zinc for the manufacture of brass products dropped sharply compared with last year as a result of the abnormally large return of brass scrap to the mills which reduced requirements for primary metals. Rolled zinc required 28 percent less slab zinc than in 1948.

Stocks. - Inventories of slab zinc at producers' plants were 94,221 tons on December 31, more than 4½ times larger than stocks on hand at the beginning of the year. The peak of the year was reached on October 31 when total stocks were 97,666 tons.

Consumers' stocks of slab zinc at the end of 1949 were 80,889 tons, a decrease of 16 percent from the beginning of the year. At the average monthly rate of consumption in 1949, consumers' stocks on hand December 31 were approximately 1-1/3 months' requirements.

Prices. - The market price for Prime Western grade slab zinc, St. Louis, was quoted at 17.50 cents per pound until March 23 when it dropped to 16.00 cents. A series of price reductions followed until June 15 when the quotation was 9.00 cents where it remained for a month. On July 18 the price increased to 9.50 cents and one week later to 10.00 cents. The remainder of the year the quotation fluctuated from 9.25 cents to 9.75 cents. One producer quoted its price at 10.00 cents but most sales were at 9.75 cents at the close of the year.

The price of the British Ministry of Supply for foreign zinc per long ton delivered to consumers, duty paid, was £106 per long ton (equivalent to 19.05 cents a pound) at the beginning of the year. On April 4 it was reduced to £101 (18.15)cents) and on May 16, June 10 and July 12 further reductions to £85 (15,27 cents), £78 (14.02 cents) and £58 (10.42 cents), respectively, took place. It was raised on July 20 to £60 15s. (10.92 cents) and on July 26 to £63 10s. (11.41 cents) where it remained until September. Another rise on September 5 established the quotation at £66 5s. (11.90 cents). On September 10 the price dropped to £63 10s. (11.41 cents) where it remained until mid-September when quotations were suspended. Due to the devaluation of the British pound on September 19, the quoted price as announced on September 21 was £87 10s. (equivalent to 10.94 cents a pound at the new $2.80 base). On October 8 a further reduction to £81 10s.

(10.19 cents) was announced followed by 3 successive increases to £83 10s. (10.44 cents), £85 10s. (10.69 cents) and £87 10s. (10.94 cents) on October 28, November 3 and November 10, respectively. On November 23 the price was lowered to £85 10s. (10.69 cents) where it remained until December 30 when it was raised to £87 10s. (10.94 cents).

Foreign trade. - Total imports of zinc in ores and concentrates in 1949 declined 9 percent from 1948. Of the 240,881 tons contained zinc imported, 60 percent came from Mexico, 25 percent from Canada, 6 percent from Peru, 3 percent from Union of South Africa, 2 percent each from Australia and Spain, 1 percent from Bolivia and the remaining 1 percent from Columbia, Costa Rica, Cuba, El Salvador, Honduras, Korea, and Saudi Arabia.

Slab zinc imports totaled 126,925 tons and were 36 percent higher than the quantity imported in 1948. Canada supplied 86 percent of the total, Mexico 11 percent, Belgium and Luxembourg 2 percent, and Norway, Australia, Burma, Japan and the Philippine Republic accounted for the remaining 1 percent.

Slab zinc was exported in 1949 to 32 foreign countries representing shipments to every continent except Australia. United Kingdom was the destination of nearly 39 percent of the 58,709 tons of slab zinc exported during the year. Over 21 percent was shipped to India, France received 8 and Germany and Netherlands received 7 percent each.

Table 1. - Mine production of recoverable zinc in the United States in 1948-1949, in short tons

State	1948	1949
Western States and Alaska:		
Alaska	22	2
Arizona	54,478	70,658
California	5,325	7,209
Colorado	45,164	47,703
Idaho	86,267	76,555
Montana	59,095	54,195
Nevada	20,288	20,443
New Mexico	41,502	29,346
Oregon	------	6
South Dakota	29	------
Texas	------	------
Utah	41,490	40,670
Washington	12,638	10,740
Total	366,298	357,527
West Central States:		
Arkansas	31	1
Kansas	35,577	29,433
Missouri	6,463	5,911
Oklahoma	43,821	44,033
Total	85,892	79,378
States East of the Mississippi River:		
Illinois	12,980	18,157
Kentucky	639	935
New Jersey	76,332	50,984
New York	34,566	37,973
Tennessee	29,524	29,788
Virginia	15,882	13,166
Wisconsin	7,864	5,295
Total	177,787	156,298
Total United States	629,977	593,203

Table 2. - Primary and redistilled secondary slab zinc produced in the United States, 1948-1949, in short tons

Year	Primary			Redistilled secondary	Total (excludes remelted)
	Domestic	Foreign	Total		
1948	537,966	249,798	787,764	62,320	850,084
1949	591,454	223,328	814,782	55,041	869,823

Table 3.- Distilled and electrolytic zinc, primary and secondary, produced in the United States, 1948-1949, in short tons

A. - Classified according to method of reduction

Year	Electrolytic primary	Distilled primary	Redistilled secondary		Total
			At primary smelters	At secondary smelters	
1948.........	312,477	475,287	28,070	34,250	850,084
1949.........	326,152	488,630	22,782	32,259	869,823

B. - Classified according to grade

	Special High Grade	Regular High Grade	Intermediate	Brass Special	Selected	Prime Western	Total
1948.........	248,346	196,482	38,892	45,946	4,723	315,695	850,084
1949.........	230,576	206,651	21,513	56,388	2,565	352,130	869,823

Table 4. - Primary slab zinc produced in the United States, by States where smelted 1/, 1948-1949, in short tons

State	1948	1949
Arkansas..................................	15,586	17,116
Idaho.....................................	2/ 42,064	2/ 41,854
Illinois..................................	3/ 93,229	3/ 86,823
Montana...................................	2/207,717	2/216,578
Oklahoma..................................	137,844	157,650
Pennsylvania..............................	171,276	156,920
Other States 4/...........................	5/120,048	5/137,841
Total.....................................	787,764	814,782

1/ Final-stage production; includes high-grade zinc refined from lower grades, but excludes lower grades consumed for this purpose.
2/ Produced by electrolytic process only.
3/ Produced by electrolytic and retort processes.
4/ Texas and West Virginia.
5/ Includes electrolytic zinc produced in Texas.

Table 5. - Consumption of slab zinc in the United States in 1948 and 1949, by industries, in short tons 1/

Industry and product	1948	1949
Galvanizing: 2/		
Sheet and strip	120,360	146,923
Wire and wire rope	49,906	39,231
Tube and pipe	81,874	78,030
Fittings	14,037	11,487
Other	104,792	75,209
Total	370,969	350,880
Brass products:		
Sheet, strip, and plate	51,813	43,157
Rod and wire	32,076	23,651
Tube	15,890	12,816
Castings and billets	4,228	2,620
Copper-base ingots	3,546	2,701
Other copper-base products	1,587	589
Total	109,140	85,534
Zinc-base alloy:		
Die castings	230,995	199,665
Alloy dies and rod	3,171	2,024
Slush and sand castings	462	492
Total	234,628	202,181
Rolled zinc	76,672	55,200
Zinc oxide	15,657	10,292
Other uses:		
Wet batteries	1,368	1,359
Desilverizing lead	2,654	2,448
Light-metal alloys	1,125	1,060
Other 3/	5,522	2,887
Total	10,669	7,754
Total: All uses	4/ 817,735	4/ 711,841

1/ Based on a canvass of 610 plants.

2/ Includes zinc used in electrogalvanizing and electroplating, but excludes sherardizing.

3/ Includes zinc used in making zinc dust, bronze powder, alloys, chemicals, castings and miscellaneous uses not elsewhere mentioned.

4/ Includes 3,141 tons of remelt zinc in 1948 and 2,394 tons in 1949.

Table 6. - Stocks of zinc on hand at zinc-reduction plants in the United States at end of year 1948-1949, in short tons

	1948	1949
At primary reduction plants..............	19,179	90,787
At secondary distilling plants...........	1,669	3,434
Total.............................	20,848	94,221

Table 7. - Consumers' stocks of slab zinc at plants at the beginning and end of 1949, by industries, in short tons

	Galva-nizers	Brass products1/	Zinc-base alloys2/	Zinc rolling mills	Oxide Plants	Others	Total
Dec. 31, 1948	3/45,627	3/18,427	3/24,274	5,983	258	3/1,315	3/4/95,884
Dec. 31, 1949	44,910	10,529	18,583	5,039	803	1,025	4/80,889

1/ Includes brass mills, brass ingot makers, and brass products.

2/ Includes producers of zinc-base die castings, zinc alloy dies, and zinc alloy rods.

3/ Revised figures.

4/ Stocks on December 31, 1948 and 1949, exclude 312 tons and 198 tons, respectively, of remelt spelter.

Table 8. - Average price received by producers for zinc, 1948-1949, by grades, in cents per pound, and value of total output

	1948	1949
Special High Grade......................	13.72	12.76
Regular High Grade......................	13.40	12.29
Intermediate............................	13.49	12.94
Brass Special...........................	13.33	12.75
Selected................................	13.05	12.87
Prime Western...........................	12.93	12.18
Average All Grades......................	13.32	12.42
Value of Total Output...................	$226,462,400	$216,064,000

Table 9. - Imports and exports of zinc, 1948-1949, in short tons 1/

	1948	1949
Imports (General 2/):		
Ore (zinc content)	3/ 264,203	240,881
Slab zinc	3/ 93,232	126,925
Imports (for consumption 4/):		
Ore (zinc content)	133,814	109,535
Slab zinc	3/ 92,495	125,564
Sheets	120	32
Old, dross, and skimmings	10,273	3,732
Zinc dust	41	17
Exports:		
Ore, and dross (zinc content)	3,547	2,925
Slab zinc	3/ 65,537	58,709
Sheets, strips, or other forms, n.e.s.	7,344	7,456
Zinc dust	891	690

1/ Figures on imports and exports compiled from records of the U. S. Department of Commerce.

2/ Data include material imported for immediate consumption plus material entering country under bond.

3/ Revised figures.

4/ Data include material for which duty has been paid in the year noted irrespective of date of importation.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE AUGUST 1950

MINERAL MARKET REPORT
M. M. S. NO. 1904

FUEL BRIQUETS AND PACKAGED FUEL IN 1949

According to reports received by the Bureau of Mines, U. S. Department of the Interior, the production of fuel briquets in 1949 declined to 2,403,971 net tons, a decrease of 23 percent from 1948, or the lowest output since 1943; packaged fuel production in 1949 declined to 125,948 tons, a decrease of 20 percent from 1948, or the lowest output since 1936. These decreases can be attributed largely to the unusually mild winters of 1948 and 1949 and to competition from other space-heating fuels, especially fuel oil and natural gas.

As indicated in table 2, 33 plants 1/ produced briquets in 1949. A total of 14 States contributed to the 1949 production, with 22 plants located in the Central States accounting for 65 percent of the total output. Wisconsin, with 10 plants and 45 percent of the national output, was the largest individual producing State. Pennsylvania followed with 4 plants, accounting for 14 percent, and West Virginia ranked third with 3 plants operating. Other producing States in order of output were as follows: Missouri, Oregon, Illinois, Washington, Arkansas, North Dakota, Kansas, Michigan, California, Nebraska, and Massachusetts. The total value of the 1949 production, $28,641,424, was a decline of 20 percent from the value of $36,011,322 reported in 1948.

Briquets were shipped to 37 States and the District of Columbia in 1949. Exports, virtually all of which were destined for Canada, totaled 167,140 tons, and imports, all from Canada, totaled only 365 tons.

Bituminous coal and Pennsylvania anthracite were the principal raw fuels used in the manufacture of fuel briquets and packaged fuel in 1949; asphalt binders were used almost exclusively in making briquets, and both asphalt and starch, together with a small amount of cement, were employed as binders in manufacturing packaged fuel.

1/ Directories of fuel-briquet and packaged-fuel operations, and a list of manufacturers of briquetting machinery, M. M. S. Nos. 1861, 1862, and 1860, respectively, are obtainable on request from the Bureau of Mines, Washington 25, D.C.

Prepared by Golden V. Chiriaco, under the supervision of J. A. Corgan, Chief, Anthracite and Coke Section, Coal Branch, Fuels and Explosives Division.

TABLE 1.—SALIENT STATISTICS OF THE FUEL-BRIQUETTING INDUSTRY IN THE UNITED STATES, 1935-39 (AVERAGE), AND 1945-49

	1935-39 (average)	1945	1946	1947 [1]	1948	1949
Production:						
Eastern States—net tons	285,248	637,740	880,109	1,089,705	1,151,041	674,938
Central States——do	588,573	1,991,733	1,986,234	1,966,834	1,820,074	1,557,819
Pacific Coast States-do	75,196	132,731	137,684	115,057	157,362	171,214
Total	949,017	2,762,204	3,004,027	3,171,596	3,128,477	2,403,971
Imports——do	11,792	722	653	387	329	365
Exports——do	[2] 18,206	174,107	163,339	248,760	207,885	167,140
Consumption, apparent [3] do	942,603	2,588,819	2,841,341	2,923,223	2,920,921	2,237,196
Plants in operation	32	32	35	35	36	33
Value of production	$6,083,308	$21,678,886	$25,299,612	$30,762,253	$36,011,322	$28,641,424
Average value per net ton f.o.b. plant:						
Eastern States	$4.28	$5.65	$6.61	$7.82	$9.55	$9.65
Central States	$7.08	$8.40	$9.03	$10.56	$12.58	$12.59
Pacific Coast States	$9.23	$10.04	$11.26	$12.77	$13.51	$14.67
World production—net tons	68,382,000	44,503,000	67,276,000	67,026,000	73,043,000	63,929,000

[1] Peak year of United States fuel-briquet production.
[2] 1937-39 average. Not reported separately prior to 1937.
[3] Production plus imports minus exports.

TABLE 2.—PRODUCTION OF FUEL BRIQUETS IN THE UNITED STATES, 1948-49

	1948			1949				
							Percent of change from 1948 in—	
	Plants	Net tons	Value	Plants	Net tons	Value	Tonnage	Value
Eastern States	8	1,151,041	$10,996,787	8	674,938	6,512,664	-41.4	-40.8
Central States	25	1,820,074	22,888,763	22	1,557,819	19,616,565	-14.4	-14.3
Pacific Coast States	3	157,362	2,125,772	3	171,214	2,512,195	+8.8	+18.2
Total	36	3,128,477	36,011,322	33	2,403,971	28,641,424	-23.2	-20.5

TABLE 3.—RAW FUELS USED IN MAKING FUEL BRIQUETS IN THE UNITED STATES, 1949

Character of raw fuels used	Plants [1]	Net tons
Pennsylvania anthracite	17	646,645
Arkansas hard coals	7	303,730
Bituminous low-volatile	17	969,514
Bituminous high-volatile	4	88,994
Semicoke (lignite char)	1	193,664
Residual carbon from pyrolysis of natural gas	1	
Residual carbon from manufacture of oil gas	2	
Petroleum coke	3	66,247
Total	[1] 33	2,268,794

Plants using—	Plants	Raw fuels used (net tons)		
		Yard screenings	Other raw fuels	Total
Yard screenings exclusively (from own or other yards)	3	76,427	—	76,427
Raw fuels (other than yard screenings) exclusively	19	—	1,169,795	1,169,795
Both yard screenings and other raw fuels	11	378,620	643,952	1,022,572
Total	33	455,047	1,813,747	2,268,794

[1] A number of plants used more than one kind of raw fuel; hence, a total of the plants above will be greater than the actual number of plants active (33) in 1949.

TABLE 4.--SHIPMENTS OF FUEL BRIQUETS OF DOMESTIC MANUFACTURE IN THE UNITED STATES, BY STATES OF DESTINATION, AS REPORTED BY PRODUCERS, 1948-49, IN NET TONS

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State of Destination	1948	1949
Arkansas	1,098	2,727
California	13,245	15,770
Connecticut	3,958	2,834
Delaware	937	368
District of Columbia	2,569	1,169
Florida	517	53
Georgia	104	---
Idaho	186	255
Illinois	134,509	128,729
Indiana	82,253	68,999
Iowa	101,201	86,567
Kansas	23,085	22,330
Kentucky	5,558	4,264
Maine	10,930	5,258
Maryland	24,555	14,955
Massachusetts	29,361	11,018
Michigan	339,137	225,461
Minnesota	434,595	341,057
Missouri	343,743	272,228
Montana	---	34
Nebraska	42,056	46,346
New Hampshire	6,616	2,515
New Jersey	25,852	21,255
New York	44,411	20,302
North Carolina	23,761	17,257
North Dakota	118,092	104,741
Ohio	87,027	56,982
Oregon	78,303	76,755
Pennsylvania	87,994	38,689
Rhode Island	3,707	1,702
South Carolina	6,577	2,779
South Dakcta	112,041	96,045
Tennessee	49	821
Texas	---	66
Utah	52	---
Vermont	3,972	1,686
Virginia	36,449	25,071
Washington	36,977	26,696
West Virginia	2,135	1,714
Wisconsin	542,634	437,173
Total	2,810,246	2,182,671

TABLE 5.--SALIENT STATISTICS OF THE PACKAGED-FUEL INDUSTRY IN THE UNITED STATES, 1935-39 (AVERAGE), 1940, AND 1945-49

	1935-39 (average)	1940 (Peak Year of Production)	1945	1946	1947	1948	1949
Production (net tons):							
Eastern States	5,052	6,349	16,606	9,065	2,153	1,859	957
Central States	116,218	276,994	191,537	181,854	180,728	155,154	124,991
Pacific Coast States	1,563	1,170	---	---	---	---	---
Total	122,833	284,513	208,143	190,919	182,881	157,013	125,948
Plants in operation	63	106	61	70	62	62	57
Value of production	$1,050,566	$2,391,922	$2,518,636	$2,496,388	$2,882,105	$2,735,861	$2,236,748
Average value per net ton f.o.b. plant:							
Eastern States	$9.45	$9.02	$12.86	$12.93	$16.58	$17.64	$17.77
Central States	$8.50	$8.36	$12.04	$13.08	$15.75	$17.42	$17.76
Pacific Coast States	$9.91	$12.82	---	---	---	---	---

TABLE 6.--RAW FUELS USED IN MAKING PACKAGED FUEL IN THE UNITED STATES, 1949

Character of raw fuels used	Plants 1/	Net tons
Bituminous low-volatile	50	113,027
Bituminous high-volatile	5	2,815
Pennsylvania anthracite	1	3,689
Semianthracite	3	
Petroleum coke	6	5,855
Total	1/ 57	125,386

Plants using--	Plants	Raw fuels used (net tons): Yard screenings	Raw fuels used (net tons): Other raw fuels	Raw fuels used (net tons): Total
Yard screenings exclusively (from own or other yards)	27	31,875	---	31,875
Raw fuels (other than yard screenings) exclusively	12	---	34,319	34,319
Both yard screenings and other raw fuels	18	22,107	37,085	59,192
Total	57	53,982	71,404	125,386

1/ A number of plants used more than one kind of raw fuel; hence, a total of the plants above will be greater than the actual number of plants active (57) in 1949.

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MINERAL MARKET REPORTS
MMS NO. 1905

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ANTIMONY IN 1949

A general business recession in the latter part of 1949 and specific consumer resistance to high prices resulted in a downward trend of all phases of the antimony industry from 1948, according to Bureau of Mines, United States Department of the Interior. Total new supply of antimony in 1949 was 30,008 tons, compared with 46,744 tons in 1948. Estimated total consumption of antimony in 1949 was 31,515 tons, compared with 40,268 tons in 1948. Industry stocks of ore, metal, oxide and sulfide (metal content) were 6,073 tons on December 31, 1949, a decrease of 3,346 tons from stocks of 9,419 tons on December 31, 1948.

Salient statistics for antimony in the United States, 1946-49

	1946	1947	1948	1949
Production of primary antimony:				
Mine (antimony content).....short tons..	2,505	5,316	6,489	1,636
Smelter (antimony content)......do......	12,422	13,782	14,308	8,099
Production of secondary antimony...do......	19,115	22,984	21,592	18,061
Imports for consumption:				
Antimony in ore..................do......	5,903	9,257	13,464	7,473
Needle or liquated antimony.....do......	-	17	533	81
Metal.........................do......	2,593	5,879	3,201	1,853
Exports of antimony ore and metal..do......	462	808	327	485
Consumption of primary antimony 1/.do......	17,515	16,647	15,455	11,530
Average price of antimony at New York: 2/				
Chinese (nominal)......cents per pound..	16.50	(3)	(3)	(3)
American.........................do......	17.31	33.45	36.67	38.73
World production (estimated) 4/metric tons.	25,400	34,800	41,300	34,000

1/ Antimony recovered chiefly as antimonial lead at primary lead refineries from domestic and foreign silver and lead ore not included.
2/ American Metal Market.
3/ Data not available.
4/ Exclusive of U.S.S.R.

Prepared by Samuel A. Gustavson and Mary E. Trought under the supervision of Charles White Merrill, Chief, Base Metals Branch.

The new supply of antimony in 1949, in terms of recoverable metal 1/, consisted of 1,505 tons from domestic antimony ores, 1,214 tons recovered from domestic silver and lead ores, 396 tons recovered from foreign silver and lead ores, 8,832 tons in imports, and 18,061 tons from secondary sources. Consumption in 1949 comprised 13,454 tons of primary and 18,061 tons of secondary material.

The average price of antimony per pound, 99.5 percent New York, boxed, was 38.73 cents. The opening quotation in 1949 was 41.73 cents, and the closing quotation 35.28 cents.

With evidence of the easing of the domestic antimony market, War Production Board General Preference Order M-112, as amended, was revoked on March 25, 1949.

Domestic primary antimony smelters produced metal, oxide and sulfide containing a total of 8,099 short tons of antimony from domestic and foreign ores, a decrease of 43 percent from 1948. The Bureau of Mines is not at liberty to publish separate data on these three intermediate primary products. However, about 60 percent of the output in 1949 was in the form of oxide, whereas over 50 percent of the output in 1948 was metal. Antimonial lead, produced as a byproduct of domestic primary lead refineries, totaled 41,402 tons containing 3,385 tons of antimony, a decrease of 59 and 41 percent respectively from 1948.

Shipments of domestic antimony ores and concentrates totaled 5,260 short tons containing 1,636 tons of antimony, of which 1,505 tons are estimated as recoverable. Most of this material was produced by the Bradley Mining Co. at its Yellow Pine mine in Idaho. This company completed and began operation of its new smelter at Yellow Pine in 1949, roasting units were started July 18, and an electric furnace August 1. Other shippers of domestic antimony ores and concentrates include Hermada Mining Co., operating its mine in Elmore County, Idaho, John M. Heizer and Ott F. Heizer, operating mines in Nevada, and Earl Pilgrim, operating the Stampede mine in the Seward Peninsula, Alaska.

Antimony-bearing ores and concentrates produced in the United States, 1940-44 (average) and 1945-49, in short tons

Year	Gross weight	Antimony content		Year	Gross Weight	Antimony content	
		Quantity	Average percent			Quantity	Average percent
1940-44(average)	8,370	2,989	35.7	1947.......	20,020	5,316	26.6
1945............	14,966	1,930	12.9	1948.......	16,239	6,489	40.0
1946............	13,962	2,505	17.9	1949.......	5,260	1,636	31.1

1/ A factor of 92 percent of the content was used to determine quantity of metal recoverable from antimony ores and concentrates.

Industrial consumption of primary antimony, 1945-49, in short tons[1]

Product	1945	1946	1947	1948	1949
Metal products:					
Ammunition	107	30	24	21	6
Antimonial lead [2]	5,920	4,827	6,172	6,024	4,737
Battery metal	1,273	1,084			
Bearing metal and bearings	2,825	2,886	2,056	1,803	873
Cable covering	275	79	61	62	172
Castings	267	233	129	81	49
Collapsible tubes and foil	203	121	77	31	14
Sheet and pipe	368	218	225	195	306
Solder	125	281	132	145	155
Type metal	1,243	1,903	1,216	1,019	587
Total metal products	12,606	11,662	10,092	9,381	6,899
Nonmetal products:					
Ammunition primers	66	15	16	6	9
Antimony trichloride	207	106	[3]	[3]	[3]
Flameproofed textiles	7,675	97	205	388	422
Frits and ceramic enamels	936	1,814	1,754	1,561	1,155
Glass and pottery	304	351	421	352	296
Matches	18	25	23	37	28
Paints and lacquers	3,062	1,662	1,324	1,288	874
Plastics	[3]	[3]	[4]156	228	349
Rubber	[3]	[3]	39	41	55
Sodium antimonate	512	1,358	[3]	[3]	[3]
Others	375	425	2,617	2,173	1,443
Total nonmetal products	13,155	5,853	6,555	6,074	4,631
Grand total	25,761	17,515	16,647	15,455	11,530

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[1] Compiled from monthly applications filed with Office of Materials Distribution, Dept. of Commerce (formerly with War Production Board and Civilian Production Administration), 1945-1948; Bureau of Mines, 1949.

[2] Includes miscellaneous metallic products.

[3] Included with "Other", Bureau of Mines not at liberty to publish separate figures.

[4] Consumption April through December 1947, January through March included with "Other".

Stocks of antimony raw materials were reduced in virtually all phases of the industry. Mine stocks at the beginning and the end of the year were 951 tons and 195 tons respectively. Other industry stocks of ore, concentrates, metal, oxides and sulfides at the beginning and the end of the year were 8,468 tons and 5,878 tons respectively. All stocks of antimony held by the Office of Metals Reserve (OMR) on December 31, 1948, were disposed of during the year, chiefly by transfer to the National Strategic Stockpile. The Bureau of Mines is not at liberty to publish data on stocks in the National Strategic Stockpile.

Imports of antimony ores and concentrates came principally from Mexico, Bolivia, Peru and Chile (probably mined in Bolivia or Peru), with small quantities from Canada, Honduras and Portugal. Imports of antimony metal were chiefly from Mexico, Yugoslavia, Belgium-Luxemburg, and China, with small quantities from the United Kingdom, Italy, Canada and the Netherlands. In addition to imports shown in the following table, 56 tons (gross weight) of antimony oxide valued at $27,290 were imported from the United Kingdom and Belgium.

Antimony imported for consumption in the United States,
1940-44 (average) and 1945-49

(U. S. Department of Commerce)

Year	Antimony ore			Needle or liquated antimony		Antimony metal		Type metal and antimonial lead1/
	Short tons	Antimony content						
		Short tons	Value	Short tons	Value	Short tons	Value	Short tons
1940-44: average.	46,945	20,330	$3,354,206	255	$ 49,364	1,806	$ 501,842	219
1945....	49,385	22,643	4,644,859	-	-	627	181,557	1,380
1946....	19,741	5,903	1,323,903	-	-	2,593	824,698	246
1947....	2/28,471	2/ 9,257	2/2,672,249	17	7,914	5,879	3,487,126	187
1948....	2/41,610	2/13,464	2/4,312,431	533	314,809	2/3,201	2/2,022,676	2/1,569
1949....	17,855	7,473	2,488,271	81	42,537	1,853	1,242,582	654

1/ Estimated antimony content;

2/ Revised figure.

Exports (gross weight) of antimony ore and concentrates were 35 tons valued at $10,984 in 1949; metals and alloys were 450 tons valued at $337,177; and salts and compounds 223 tons valued at $151,932. Exports of antimony ore, concentrates, metals, and alloys totaled 327 tons in 1948. Data on exports of compounds were not available for the period 1946 through 1948.

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MINERAL MARKET REPORT
MMS NO. 1906.

FINAL ANNUAL FIGURES - PLEASE FILE FOR REFERENCE UNTIL PRINTED REPORT IS AVAILABLE

GOLD AND SILVER IN 1949

United States mine production of gold in 1949 decreased 1 percent compared with 1948, thus continuing the downtrend from the post war high established in 1947, according to the Bureau of Mines, United States Department of the Interior. The 1949 output of 1,991,783 fine ounces was twice the wartime low reached in 1945 but was smaller than any prewar year since 1895. Silver production also decreased in 1949, the output of 34,674,952 fine ounces being 9 percent below that for 1948. The gold-mining industry had returned to unrestricted operations when War Production Board Order L-208 was rescinded, effective July 1, 1945; but many mines producing in prewar years did not resume work or did so on a restricted scale only. Higher prices for equipment and supplies and higher wages made former operators reluctant to reopen mines with narrow prewar profit margins. Continued inflation with little evidence that inflationary forces soon would be arrested, discouraged those who might otherwise have promoted new gold-producing enterprises. Years of idleness, moreover, had resulted in deterioration of plants and mine workings which required very large capital outlays for rehabilitation.

The reversal in 1949 of the post war uptrend in silver production is explained largely by the recession in copper, lead, and zinc prices accompanied by curtailed output at mines producing these metals and byproduct silver. The higher Treasury buying price for silver domestically mined after July 1, 1946, continued to encourage silver mining.

The Treasury buying price for gold and silver throughout 1949 continued at $35 and $0.9050505+ per fine ounce, respectively. The price for silver that could not qualify for Treasury purchase fluctuated between a low of $0.7025 to a high of $0.7350 per ounce of silver 0.999 fine in 1949 compared with $0.7025 and $0.7775, respectively, in 1948.

The net inflow of gold, reestablished in 1946 after a period when war expenditures had depleted the United States holdings, increased in volume in 1947 and continued nearly unabated in 1948; in 1949 it dropped to less than one-third of the 1948 total. Recent gains resulted in the establishment of new all-time monthly highs in United States stocks from January 1948 until the end of August 1949, following which stocks dropped slightly but, nonetheless, remained close to peak levels through the remainder of the year. Likewise, the net inflow of silver was resumed in 1946, increased in 1947 and 1948, but dropped 14 percent in 1949.

Prepared by Charles White Merrill, Acting Chief, Rare and Precious Metals Branch.

Domestic production. - California which had been the leading gold producer since 1946, was forced into second place in 1949 by South Dakota where output expanded 23 percent compared with 1948. These two States together with Utah and Alaska in third and fourth places, respectively, accounted for 72 percent of the United States total. South Dakota output came almost entirely from gold ore produced at the Homestake mine, California production came principally from straight gold mines (both placer and lode), Utah production was mainly a byproduct from the treatment of copper ore mined in the West Mountain (Bingham) district and Alaska's gold was almost entirely from placers mostly recovered by bucket-line dredges. Idaho continued to be the leading silver producer, followed in importance by Utah and Montana, an order unchanged since 1943. These three States supplied 67 percent of the 1949 domestic output. About one-half of the Idaho production was recovered from dry ores, but most of the rest from the three States was a byproduct of ores treated principally for base metals.

Gold production was divided fairly evenly among that recovered at amalgamation-cyanidation mills, that recovered by the smelting of crude ores and concentrates (only a very small part of which was recovered by direct smelting of ore), and that saved by placer methods. Almost 87 percent of the domestic silver output was recovered by the smelting of concentrates and nearly all of the remainder by the direct smelting of ore.

Salient statistics of gold and silver in the United States, 1/ 1945-49

	1945	1946	1947	1948	1949
Mine production, fine ounces:					
Gold	954,572	1,574,505	2,109,185	2,014,257	1,991,783
Silver	29,024,197	22,914,604	35,823,563	38,096,031	34,674,952
Ore (dry and siliceous) produced (short tons):					
Gold ore	1,364,308	2,395,500	3,523,715	3,261,194	3,376,139
Gold-silver ore	276,530	389,681	366,454	569,760	412,378
Silver ore	343,458	209,626	344,649	370,647	476,960
Percentage derived from –					
Dry and siliceous ores:					
Gold	30	40	39	39	45
Silver	24	24	26	27	24
Base metal ores:					
Gold	51	23	29	31	28
Silver	76	75	74	73	76
Placers:					
Gold	19	37	32	30	27
Silver	(2)	(2)	(2)	(2)	(2)
Net industrial consumption:					
Gold	$108,944,332	$153,687,000	$48,900,000	$44,986,000	$108,842,471
Silver, fine ounces	126,300,000	87,000,000	98,500,000	105,289,000	88,000,000
Imports:					
Gold	$93,718,050	$532,961,768	$2,079,588,406	$1,981,175,178	$771,390,261
Silver	$27,278,396	$57,577,888	$68,140,343	$70,884,513	$73,535,694
Exports:					
Gold	$199,967,940	$221,467,636	$213,240,800	$300,771,144	$84,935,678
Silver	$90,936,901	$36,454,690	$30,648,742	$12,400,060	$23,281,043
Monetary stocks: 3/					
Gold	$20,065,000,000	$20,529,000,000	$22,754,000,000	$24,244,000,000	$24,427,000,000
Silver, fine ounces	2,005,000,000	1,951,000,000	1,953,000,000	1,952,000,000	1,978,000,000
Price, average, per fine oz.:					
Gold	$35.00	$35.00	$35.00	$35.00	$35.00
Silver	$0.711+	$0.808	$0.905+	$0.905+	$0.905+
World production, fine oz.:					
Gold	26,100,000	27,500,000	28,900,000	29,600,000	(4)
Silver	156,800,000	133,200,000	165,600,000	171,000,000	(4)

1/ Philippine Islands and Puerto Rico excluded. 2/ Less than 0.5 percent. 3/ Owned by Treasury Department; privately held coinage not included. 4/ Not available.

Mine production of gold and silver in the United States, 1948 and 1949, by States, in fine ounces

	Gold		Silver	
	1948	1949	1948	1949
Western States and Alaska:				
Alaska	248,395	229,416	67,341	36,056
Arizona	109,487	108,993	4,837,740	4,970,736
California	421,473	417,231	724,771	783,880
Colorado	154,802	102,618	3,011,011	2,894,886
Idaho	58,454	77,829	11,448,875	10,049,257
Montana	73,091	52,724	6,930,716	6,327,025
Nevada	111,532	130,399	1,790,020	1,800,209
New Mexico	3,414	3,249	537,674	380,855
Oregon	14,611	16,226	13,596	12,195
South Dakota	377,850	464,650	94,693	109,383
Texas	57	40	3,065	2,691
Utah	368,422	314,058	8,045,329	6,724,880
Washington	70,075	71,994	375,831	357,853
Wyoming	115	389	11	21
	2,011,778	1,989,816	37,880,673	34,449,927
West Central States:				
Missouri	-	-	114,187	123,413
States east of the Mississippi:				
Georgia	19	18	3	-
Illinois	-	-	4,047	3,128
Michigan	-	-	-	-
New York	-	-	18,788	18,378
North Carolina	-	13	-	-
Pennsylvania	2,200	1,645	13,731	10,827
Tennessee	156	171	39,692	41,833
Vermont	104	120	24,910	27,446
	2,479	1,967	101,171	101,612
	2,014,257	1,991,783	38,096,031	34,674,952

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MINERAL MARKET REPORT
MMS NO. 1909

TIN CONSUMED IN THE MANUFACTURE OF TIN PLATE AND TERNEPLATE IN 1949.

By the end of 1949 the tin plate industry was virtually free of market controls which had been in effect since early 1942, except for export license and pig tin reporting requirements according to the Bureau of Mines, Department of the Interior. Tin mills were operated at a lower rate and 6 percent less tin was consumed in the manufacture of tin plate and terneplate in 1949. than in 1948. Total consumption of tin in the manufacture of tin plate and terneplate including plant losses was 30,957 long tons.

Tin plate production was 2 percent less than in 1948, chiefly because of decreases in exports and requirements for the food pack. Some production was lost as a result of cessation of operations at mills during the steel strike in the latter part of 1949. Hot-dipped tin plate production, accounting for only 45 percent of total tin plate, declined 11 percent in both production and tin consumption. Nearly 70 percent of the total tin used to make tin plate was for hot-dipped in 1949. Electrolytic tin plate output requiring considerably less tin per unit of product than hot-dipped continued to expand and established an annual record output in 1949. By using only 3 percent more tin, electrolytic lines produced 6 percent more tin plate than in 1948. Electrolytic tin plate production, alone in 1949 was virtually the same as the total domestic output of tin plate achieved 2 decades ago in 1929 (a record year, not exceeded until 1936). However, this electrolytic tin plate production required less than a third the quantity of tin used in 1929. Hot-dipped tin plate has been used chiefly to make sanitary or packers' cans. Electrolytic tin plate, in increasing proportions has been divided between general line and sanitary cans, and most of the closures and crowns. Demand for cans of all kinds increased only 1 percent in 1949. Requirements for cans for the food pack, the chief user, decreased 2 percent; whereas that for nonfood products increased 10 percent. Greater use of beer cans accounted for most of this increase. Use of beer cans increased 28 percent, and tonnage-wise accounted for 11 percent of all products packed in 1949. Special quota restrictions on the amount of tin for beer cans (M-81-containers) were removed in March.

Prepared by Samuel A. Gustavson and John B. Umhau, under the supervision of Charles White Merrill, Chief, Base Metals Branch, Minerals Division.

There were indications of the probable return to prewar practice of heavier coated ternes, as the quantity of tin per unit specified for some of the tonnage was higher, and 60 percent more tin was required for long ternes in 1949 than in 1948, whereas tonnage output of long ternes increased only 10 percent. Total terneplate production decreased 26 percent in 1949; a drop of 55 percent in the output of short ternes offset an increase of 10 percent in the production of long ternes. Total tin used in the manufacture of terneplate decreased 7 percent.

Exports of tin cans decreased nearly 15 percent, and were 34,817 short tons in 1949 compared with 40,824 in 1949. Tin plate exports declined 15 percent, but the quantity and proportion of electrolytic tin plate shipped abroad was larger. Imports of tin plate, although small in the aggregate and coming mostly from Canada in the fall, were the largest in 35 years.

When the year 1949 opened announcement had been made that the tin-conservation program would continue essentially unchanged with M-43 and M-81 in effect through June 30, 1949. (Tin controls had been scheduled to expire June 30). However, chiefly because of interruption of Bolivian tin production by labor disturbances in May and June which threatened the supply of tin and tin ores, continuance of the authority over tin and tin products was recommended and extended to June 30, 1950. Controls were modified to permit greater flexibility in the use of tin. In March special quota limits on beer and animal food cans were removed, and use of electrolytic permitted in some important classifications previously restricted to black plate and bonderized. Disposal of mill accumulations was permitted, and uses of terneplate liberalized to include repair and replacement for roofing, smoke pipe, and flue jacket liners for hot water heaters. Optional use of .50 lb. and heavier electrolytic tin plate for hot dipped tin plate was permitted. In June, controls were lifted on cans from .25 electrolytic, and 1.30 and 4.0 lb. terneplate; and use of .50 electrolytic for hand soldered cans. On August 25, announcement was made of the revocation of M-81 and specification restrictions on closures (M-43) effective December 1, 1949. End use restrictions were eliminated, but pig tin allocations, controls over inventories and imports were retained until discontinued by announcement November 25. As of December 31, 1949, tin and manufactures, including tin plate were on the positive list requiring export license for shipment to any destination abroad, except Canada.

The following summary of tin consumption by concerns producing tin plate and terneplate in 1948 and 1949 is released in advance of a final report now in preparation by the Bureau of Mines:

SUMMARY

	1948 Long Tons	1949 Long Tons
Total tin on hand January 1	10,752	11,980
Net receipts during year	34,894	33,053
Supply available for use	45,646	45,033
Minus tin on hand December 31	11,980	13,485
Total tin processed during year	33,666	31,548
Minus tin content of scrap shipped from plants	885	591
Total tin consumed in manufacturing	32,781	30,957
Deduct plant losses	471	570
Tin content of manufactured products	32,310	30,387
Tin plate	31,503	29,617
Terneplate	672	626
Other products	135	144

RECEIPTS - The tin and terneplate industry acquired tin for its requirements in 1948 and 1949 as follows:

	1948 Long tons	1949 Long tons
Virgin pig tin	34,213	32,583
Tin in terne metal	681	470
Total	34,894	33,053

The principal brand acquired by the industry for use in 1949 was Straits, accounting for 33 percent of the receipts of pig tin. Longhorn, acquired from the Texas City Smelter amounted to 29 percent, Katanga 20 percent, Banka 9 percent, and the remainder 9 percent, which contained some pig tin derived from detinning operations.

STOCKS -- Tin and terneplate plant stocks increased 13 percent in 1949, with pig tin inventories up 19 percent. Tin on hand at the end of 1947, 1948, and 1949 was in the following forms (long tons):

Raw material	1947	1948	1949
Virgin pig tin	6,697	7,824	9,300
Tin in terne metal	134	200	85
Tin in plant scrap	253	170	276
Tin in process	3,668	3,736	3,824
Total	10,752	11,980	13,485

PRODUCTS MANUFACTURED AT TIN-PLATE AND TERNEPLATE PLANTS - In addition to the tin used in the manufacture of tin plate and terneplate, 144 long tons (135 in 1948) were used for all other purposes, such as tinned articles, babbitt, and bronze and brass. Quantities used for tin plate and terneplate are shown in the following tables:

Tin content of tin plate, waste-waste, strips, cobbles, etc., produced in the United States, 1948 and 1949

Product	Quantity Manufactured short tons		Tin content			
			Total long tons		Pounds per short tons of tin plate	
	1948	1949	1948	1949	1948	1949
Tin plate						
Hot-dipped.......	1,848,373	1,648,001	22,028	19,613	26.7	26.7
Electrolytic.....	1,918,708	2,030,567	8,518	8,814	10.0	9.7
Total tin plate	3,767,081	3,678,568	30,546	28,427	18.2	17.3
Waste-waste, strips cobbles (etc.)	147,242	185,233	957	1,190	14.6	14.4
Grand total.....	3,914,323	3,863,801	31,503	29,617	18.0	17.2

Tin content of terneplate produced in the United States, 1948 and 1949

Product	Quantity manufactured short tons		Tin content (long tons)		Pounds of tin per short tons of terneplate	
	1948	1949	1948	1949	1948	1949
Short ternes...	181,141	81,682	388	177	4.8	4.9
Long ternes....	137,045	150,143	272	435	4.4	6.5
Waste-waste....	5,902	7,816	12	14	4.6	4.0
Total...	324,088	239,641	672 1/	626 2/	4.6	5.9

1/ Total includes 420 long tons of pig tin and 252 long tons in terne metal.
2/ Total includes 67 long tons purchased as pig tin and 559 long tons as terne metal.

Interior - Duplicating Section, Washington, D. C.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE AUGUST 31, 1950

MINERAL MARKET REPORT
NO. M. M. S. 1910

PENNSYLVANIA ANTHRACITE 1949 [1]

Because anthracite is primarily a space-heating fuel, the over-all annual consumption is affected directly by the intensity of the weather. Abnormally warm weather was one of the most important contributing factors in the sharp decline in the 1949 production of Pennsylvania anthracite to 42,701,724 net tons, a decrease of 25 percent from 1948. Other important factors contributing to the decrease in output were competition from other fuels, especially fuel oil and natural gas, and loss in foreign markets. With increased output of coal in Europe, those countries were in a better position to supply their fuel needs, and Canada's requirements dropped commensurately with the extremely warm weather of the 1949 winter months.

The various types of mining contributed in virtually the same proportion in 1949 as in 1948. Output from deep mines accounted for 63 percent of the 1949 production; strip pits 24 percent; and culm banks 11 percent. Dredging operations, which normally account for only a small part of the over-all annual output of anthracite, contributed 2 percent of the total output in 1949. Although the average number of men employed dropped to 75,377, a slight decline from 1948, the output per man per day, which averaged 2.81 tons in 1948, increased to 2.87 tons in 1949. The mines worked an average of 195 days compared with 265 days in 1948.

The New England and Middle Atlantic States, Maryland, Delaware, and the District of Columbia received 87 percent of the total anthracite shipments in 1949. Other States received 3 percent, and shipments to Canada and other foreign countries totaled 10 percent.

The mine workers received substantial wage increases and other benefits under a new wage contract between the anthracite producers and the United Mine Workers of America which became effective March 16, 1950; the contract will terminate June 30, 1952.

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[1] This report contains tables showing final statistics of the Pennsylvania anthracite industry for 1949. The complete report to be released as a chapter of Minerals Yearbook 1949, will be distributed to the regular mailing list.

Prepared by Marian I. Cooke and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Branch, Fuels and Explosives Division.

Table 1.--Salient statistics of Pennsylvania anthracite industry, 1945-49

	1945	1946	1947	1948	1949
Production:					
Loaded at mines for shipment:					
Breakers....................net tons.	1/45,249,706	50,115,427	1/48,073,153	47,816,627	35,653,628
Washeries........................do....	1/2,551,426	3,106,521	1/2,009,233	1,725,124	1,380,115
Dredges..........................do....	741,319	886,639	970,027	941,441	655,753
Sold to local trade and used by employees........................net tons.	4,273,864	4,435,536	4,232,871	4,795,721	3,848,420
Used at collieries for power and heat net tons..	2,117,594	1,962,750	1,904,725	1,861,035	1,163,808
Total production..............do....	54,933,909	60,506,873	57,190,009	57,139,948	42,701,724
Value at breaker, washery or dredge.......	$323,944,435	$413,417,070	$413,019,486	$467,051,800	$358,008,451
Average sales realization per net ton on breaker shipments:					
Domestic.................................	$7.93	$9.21	$9.82	$11.05	$11.39
Steam....................................	$3.56	$4.08	$4.32	$4.90	$5.05
Total all sizes..........................	$6.26	$7.25	$7.65	$8.67	$8.90
Percent in total breaker shipments:					
Total domestic...........................	61.8	61.8	60.4	61.3	60.6
Total steam..............................	38.2	38.2	39.6	38.7	39.4
Producers' stocks 2/.............net tons	130,000	251,168	702,109	963,839	975,457
Exports 3/........................do...	3,691,000	6,497,245	8,509,995	6,675,914	4,942,670
Imports 3/........................do...	149	9,556	10,350	945	....
Consumption (apparent)............do...	51,600,000	53,900,000	48,200,000	50,200,000	37,700,000
Average number of days worked...........	269	271	259	265	195
Average number of men employed..........	72,842	78,145	78,600	76,215	75,377
Output per man per day...........net tons	2.79	2.84	2.78	2.81	2.87
Output per man per year...........do...	751	770	720	745	560
Quantity cut by machines..........do...	1,210,171	1,232,828	1,209,983	1,016,757	557,599
Quantity mined by stripping.......do...	10,056,325	12,858,930	12,603,545	13,352,874	10,376,808
Quantity loaded by machines underground.......................net tons	13,927,955	15,619,162	16,054,011	15,742,368	11,858,088
Distribution:					
Total receipts in New England 4/net tons	5,081,000	5,643,076	4,737,946	4,862,834	3,445,543
Exports to Canada 3/..............do...	3,393,000	4,513,637	4,470,034	4,931,918	3,580,568
Loaded into vessels at Lake Erie 5/ net tons	1,234,000	1,112,996	936,040	1,125,050	611,888
Receipts at Duluth-Superior 6/.....do...	766,000	639,900	446,605	538,992	271,854

1/Small quantity of washery coal included with "Breakers."
2/Anthracite Committee.
3/U.S. Department of Commerce.
4/Commonwealth of Massachusetts, Division on the Necessaries of Life; and Association of American Railroads.
5/Ore and Coal Exchange, Cleveland, Ohio.
6/U.S. Engineer, Duluth, Minn.

TABLE 2. - Statistical summary of monthly developments in the Pennsylvania anthracite industry in 1949
[All tonnage figures represent net tons]

	January	February	March	April	May	June	July	August	September	October	November	December	Total 1949	Change from 1948 (percent)	Total 1948
Production (including mine fuel, local sales, and dredge coal)	3,725,000	2,930,000	2,375,000	3,725,000	4,407,000	3,406,000	3,925,000	3,710,000	2,114,000	4,979,000	4,657,000	2,749,000	42,702,000	- 25.3	57,140,000
Shipments (breakers and washeries only, all sizes):															
By rail 1/	2,889,862	2,235,829	1,876,945	3,104,266	3,760,937	3,069,768	3,055,582	3,127,286	2,133,628	3,829,248	3,646,935	2,502,070	35,232,356	- 25.5	47,298,381
By truck 2/	679,061	553,579	466,330	479,955	555,043	437,161	292,331	374,380	358,731	605,332	632,146	654,075	6,088,124	- 20.0	7,610,195
Carloadings 3/	56,759	44,843	38,846	60,819	72,169	57,154	62,853	61,288	39,594	76,601	70,160	47,443	688,526	- 25.0	917,685
Distribution:															
Lake Erie loadings 4/	....	....	....	26,035	73,893	59,101	86,557	71,662	66,901	125,923	101,516	....	611,888	- 45.6	1,125,050
Lake Ontario loadings 5/	....	....	....	17,591	30,865	24,880	14,648	19,864	17,662	17,249	25,795	....	168,554	- 14.5	197,252
Receipts at Duluth-Superior 6/	....	....	....	8,164	21,824	27,741	23,623	17,554	30,432	70,164	72,352	....	271,854	- 49.6	538,992
Upper Lake dock trade: 7/															
Receipts:															
Lake Superior	22	....	....	8,045	21,823	27,843	23,711	17,650	30,438	70,206	75,949	57	275,744	- 51.9	573,072
Lake Michigan	4,201	2,918	1,800	21,161	52,776	23,454	36,870	55,367	43,392	40,859	50,957	518	334,273	- 31.0	484,791
Deliveries (reloadings):															
Lake Superior	37,645	40,189	13,369	2,436	9,761	10,118	9,326	24,328	39,115	56,824	67,466	46,415	356,992	- 29.7	508,003
Lake Michigan	32,938	34,233	29,552	13,512	28,643	32,656	25,120	40,906	44,176	39,129	31,862	29,589	382,316	- 17.5	463,620
New England receipts:															
By tide 3/	9,289	2,699	1,537	9,100	15,825	10,246	14,206	13,079	10,120	10,244	9,470	3,939	109,754	- 49.4	216,928
By rail 8/	287,801	176,445	155,167	247,891	326,070	322,437	291,093	301,415	230,270	321,947	401,717	273,536	3,335,789	- 28.2	4,645,906
Exports 9/	305,452	337,950	300,652	424,145	616,931	609,843	358,119	382,382	399,256	509,657	421,005	277,278	4,942,670	- 26.0	6,675,914
Imports 9/	....	....	....	....	....	....	....	....	....	....	....	....	....	....	945
Industrial consumption and stocks by:															
Railroads (class 1 only): 3/															
Consumption	90,644	76,132	76,973	57,000	50,375	44,100	41,323	42,346	45,630	64,077	70,920	76,198	735,718	- 18.7	905,063
Stocks	92,255	80,044	58,473	62,317	61,821	64,847	61,176	62,726	64,968	70,378	68,502	66,388	66,388	- 31.4	96,792
Electric power utilities: 10/															
Consumption	318,675	263,279	281,755	252,790	259,128	257,600	258,178	302,139	272,352	290,986	292,217	304,758	3,353,857	- 15.4	3,965,965
Stocks	2,548,257	2,484,773	2,375,998	2,459,623	2,634,252	2,744,799	2,820,706	3,992,748	4,020,784	4,179,321	2,298,783	4,259,533	4,259,533	+ 71.5	2,483,372
Stocks on Upper Lake docks: 7/															
Lake Superior	160,442	120,252	105,671	111,064	122,127	139,852	154,237	147,556	137,401	150,375	158,967	112,652	112,652	- 24.2	198,065
Lake Michigan	153,222	121,907	94,155	102,063	126,193	116,991	128,741	143,202	142,418	144,149	163,244	134,173	134,173	- 26.3	181,959
Producers' stocks 11/	927,859	836,779	442,117	573,429	584,470	449,837	661,295	879,136	600,620	724,130	1,138,350	975,457	975,457	+ 1.2	963,839
Sales of commercial stokers: 9/															
Class 1 (capacity under 61 lb. of coal per hour)	301	285	326	249	259	569	376	510	723	519	319	168	4,604	- 51.7	9,524
Class 2 (capacity 61 to 100 lb. of coal per hour)	34	20	14	12	10	47	37	61	82	53	48	60	478	- 37.2	761
Wholesale price indices (1926=100): 12/															
On tracks, destination:															
Chestnut	133.7	134.1	134.1	131.3	130.2	130.6	131.8	132.3	134.7	135.2	135.4	135.4	133.2	+ 5.0	126.9
Pea	153.6	153.8	155.5	150.1	148.8	149.2	150.3	150.8	154.3	154.9	154.2	154.9	152.4	+ 5.3	144.7
Labor conditions: 12/															
Average weekly earnings	$67.39	$47.97	$46.15	$56.82	$63.63	$45.28	$66.08	$42.80	$59.24	$75.81	$67.94	$42.22	$56.78	- 14.3	$66.27
Average hourly earnings	$1.872	$1.838	$1.846	$1.857	$1.866	$1.935	$1.888	$1.829	$1.863	$1.934	$1.903	$1.919	$1.879	+ 3.8	$1.811
Average hours worked per week	36.0	26.1	25.0	30.6	34.1	23.4	35.0	23.4	31.8	39.2	35.7	22.0	30.2	- 17.5	36.6

1/ Furnished by Anthracite Institute.
2/ Pennsylvania Department of Mines.
3/ Association of American Railroads.
4/ Ore and Coal Exchange, Cleveland, Ohio.
5/ Buffalo Branch, Ore and Coal Exchange, Cleveland, Ohio.
6/ U. S. Engineer Office, Duluth, Minnesota.
7/ Includes all commercial docks on Lake Superior and west shore of Lake Michigan as far south as Kenosha. Based on data courteously supplied by Maher Coal Bureau and direct reports to the Bureau of Mines.
8/ Furnished by Commonwealth of Massachusetts, Division on the Necessaries of Life.
9/ U. S. Department of Commerce.
10/ Federal Power Commission
11/ Anthracite Committee. Represents coal in storage nearest available date to the end of the month.
12/ Bureau of Labor Statistics.

TABLE 3. - Pennsylvania anthracite shipped, sold locally, and used as colliery fuel in 1949, by regions

Region	Shipments		Local sales		Colliery fuel		Total	
	Net tons	Value 1/	Net tons	Value	Net tons	Value	Net tons	Value 1/
Lehigh:								
Breakers	6,490,186	$54,943,098	326,536	$3,213,845	163,504	$1,032,198	6,980,226	$59,189,141
Washeries	271,772	857,682	3,771	31,785	170	863	275,713	890,330
Dredges	22,131	39,256	....	....	....	....	22,131	39,256
Total Lehigh	6,784,089	55,840,036	330,307	3,245,630	163,674	1,033,061	7,278,070	60,118,727
Schuylkill:								
Breakers	13,750,139	111,719,031	860,277	6,029,403	202,655	485,167	14,813,071	118,233,601
Washeries	575,549	2,310,581	6,992	27,014	543	3,096	583,084	2,340,691
Dredges	633,622	1,641,702	193,769	412,475	600	1,663	827,991	2,055,840
Total Schuylkill	14,959,310	115,671,314	1,061,038	6,468,892	203,798	489,926	16,224,146	122,630,132
Wyoming:								
Breakers	15,401,360	150,396,756	2,382,259	20,244,798	796,336	2,350,525	18,579,955	172,992,079
Washeries	532,794	1,840,567	51,669	201,642	....	....	584,463	2,042,209
Dredges	....	....	15,000	36,000	....	....	15,000	36,000
Total Wyoming	15,934,154	152,237,323	2,448,928	20,482,440	796,336	2,350,525	19,179,418	175,070,288
Total, excluding Sullivan County:								
Breakers	35,641,685	317,058,885	3,569,072	29,488,046	1,162,495	3,867,890	40,373,252	350,414,821
Washeries	1,380,115	5,008,830	62,432	260,441	713	3,959	1,443,260	5,273,230
Dredges	655,753	1,680,958	208,769	448,475	600	1,663	865,122	2,131,096
Total	37,677,553	323,748,673	3,840,273	30,196,962	1,163,808	3,873,512	42,681,634	357,819,147
Sullivan County: 2/								
Breakers	11,943	110,545	8,147	78,759	....	....	20,090	189,304
Grand total:								
1949	37,689,496	323,859,218	3,848,420	30,275,721	1,163,808	3,873,512	42,701,724	358,008,451
1948	50,483,192	423,601,116	4,795,721	37,851,673	1,861,035	5,599,011	57,139,948	467,051,800
Change, 1949 - percent	-25.3	-23.5	-19.8	-20.0	-37.5	-30.8	-25.3	-23.3

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

2/ For purposes of historical comparison and statistical convenience, the mines of Sullivan County are grouped with the Pennsylvania anthracite region, although the product is classified as semianthracite according to the American Society for Testing Materials Tentative Standard.

TABLE 4. - Pennsylvania anthracite produced in 1949, classified as fresh-mined culm bank, and river coal, and as breaker, washery, and dredge product, by fields, in net tons

Field and type of plant	From mines			From culm banks	From river dredging	Total
	Underground		Strip pits			
	Mechanically loaded	Hand loaded				
Eastern Middle:						
Breakers	396,677	1,410,025	1,379,405	193,565	....	3,379,672
Washeries	....	....	....	238,532	....	238,532
Total Eastern Middle	396,677	1,410,025	1,379,405	432,097	....	3,618,204
Western Middle:						
Breakers	920,183	4,018,433	3,331,563	1,366,775	....	9,636,954
Washeries	....	....	27,828	107,842	....	135,670
Dredges	....	....	....	....	246,905	246,905
Total Western Middle	920,183	4,018,433	3,359,391	1,474,617	246,905	10,019,529
Southern:						
Breakers	497,126	3,815,540	3,382,420	1,081,585	....	8,776,671
Washeries	....	....	....	484,595	....	484,595
Dredges	....	....	....	....	603,217	603,217
Total Southern	497,126	3,815,540	3,382,420	1,566,180	603,217	9,864,483
Northern:						
Breakers	10,044,102	5,908,474	2,255,592	371,787	....	18,579,955
Washeries	....	....	....	584,463	....	584,463
Dredges	....	....	....	....	15,000	15,000
Total Northern	10,044,102	5,908,474	2,255,592	956,250	15,000	19,179,418
Total, excluding Sullivan County:						
Breakers	11,858,088	15,152,472	10,348,980	3,013,712	....	40,373,252
Washeries	....	....	27,828	1,415,432	....	1,443,260
Dredges	....	....	....	....	865,122	865,122
Total	11,858,088	15,152,472	10,376,808	4,429,144	865,122	42,681,634
Sullivan County: Breakers	....	20,090	....	....	....	20,090
Grand total	11,858,088	15,172,562	10,376,808	4,429,144	865,122	42,701,724

TABLE 5. - Pennsylvania anthracite produced in 1949, classified as fresh-mined, culm bank, and river coal, and as breaker, washery, and dredge product, by regions, in net tons

Region and type of plant	From mines			From culm banks	From river dredging	Total
	Underground		Strip pits			
	Mechanically loaded	Hand loaded				
Lehigh:						
Breakers	396,677	3,732,584	2,431,915	419,050	....	6,980,226
Washeries	....	....	....	275,713	....	275,713
Dredges	....	....	....	....	22,131	22,131
Total Lehigh	396,677	3,732,584	2,431,915	694,763	22,131	7,278,070
Schuylkill:						
Breakers	1,417,309	5,511,414	5,661,473	2,222,875	....	14,813,071
Washeries	....	....	27,828	555,256	....	583,084
Dredges	....	....	....	....	827,991	827,991
Total Schuylkill	1,417,309	5,511,414	5,689,301	2,778,131	827,991	16,224,146
Wyoming:						
Breakers	10,044,102	5,908,474	2,255,592	371,787	....	18,579,955
Washeries	....	....	....	584,463	....	584,463
Dredges	....	....	....	....	15,000	15,000
Total Wyoming	10,044,102	5,908,474	2,255,592	956,250	15,000	19,179,418
Total, excluding Sullivan County:						
Breakers	11,858,088	15,152,472	10,348,980	3,013,712	....	40,373,252
Washeries	....	....	27,828	1,415,432	....	1,443,260
Dredges	....	....	....	....	865,122	865,122
Total	11,858,088	15,152,472	10,376,808	4,429,144	865,122	42,681,634
Sullivan County: Breakers	....	20,090	....	....	....	20,090
Grand total	11,858,088	15,172,562	10,376,808	4,429,144	865,122	42,701,724

TABLE 6.--Pennsylvania anthracite produced, 1945-49, by fields, in net tons

[The figures of breaker product include a certain quantity of culm-bank coal, which amounted to 3,013,712 tons in 1949]

Field	1945	1946	1947	1948	1949
Eastern Middle:					
Breakers	1/5,005,245	5,057,619	4,270,240	4,467,628	3,379,672
Washeries	1/342,116	282,481	315,014	298,601	238,532
Total Eastern Middle	5,347,361	5,340,100	4,585,254	4,766,229	3,618,204
Western Middle:					
Breakers	11,540,524	13,040,147	12,147,528	12,405,178	9,636,954
Washeries	130,789	530,246	591,652	240,157	135,670
Dredges	308,976	362,423	411,804	311,183	246,905
Total Western Middle	11,980,289	13,932,816	13,150,984	12,956,518	10,019,529
Southern:					
Breakers	10,916,769	11,817,427	11,643,971	11,622,538	8,776,671
Washeries	1,373,578	1,386,125	237,131	496,194	484,595
Dredges	896,250	761,131	796,174	664,350	603,217
Total Southern:	13,186,597	13,964,683	12,677,276	12,783,082	9,864,483
Northern:					
Breakers	23,503,306	26,227,918	25,831,439	25,839,648	18,579,955
Washeries	1/735,041	925,427	890,368	719,676	584,463
Dredges	....	8,840	11,728	12,471	15,000
Total Northern	24,238,347	27,162,185	26,733,535	26,571,795	19,179,418
Total, excluding Sullivan County:					
Breakers	50,965,844	56,143,111	53,893,178	54,334,992	40,373,252
Washeries	1/2,581,524	3,124,279	2,034,165	1,754,628	1,443,260
Dredges	1,205,226	1,132,394	1,219,706	988,004	865,122
Total, excluding Sullivan County	54,752,594	60,399,784	57,147,049	57,077,624	42,681,634
Sullivan County:					
Breakers	149,505	85,402	1/42,960	62,324	20,090
Washeries	31,810	21,687	(1)	....	....
Total Sullivan County	181,315	107,089	42,960	62,324	20,090
Grand total	54,933,909	60,506,873	57,190,009	57,139,948	42,701,724

1/Small quantity of washery coal included with breaker.

TABLE 7. - Pennsylvania anthracite produced in 1949, by counties

County	Total shipments		Sold to local trade		Colliery fuel		Total production	
	Net tons	Value 1/	Net tons	Value	Net tons	Value	Net tons	Value 1/
Carbon	2,309,367	$18,997,690	45,955	$456,290	55,369	$426,276	2,410,691	$19,880,256
Columbia	1,161,179	10,672,549	54,943	446,209	35,082	73,359	1,251,204	11,192,117
Dauphin and Susquehanna	195,930	688,096	158,870	359,517	173	462	354,973	1,048,075
Lackawanna	4,954,556	44,711,033	900,545	8,611,504	283,627	839,649	6,138,728	54,162,186
Lancaster, Lebanon, Northampton, and Snyder 2/	305,334	672,710	3,484	11,005	....	....	308,818	683,715
Luzerne	13,187,670	126,392,569	1,734,757	13,729,927	580,780	1,833,071	15,503,207	141,955,567
Northumberland	4,194,358	30,987,070	384,855	2,457,282	33,990	70,367	4,613,203	33,514,719
Schuylkill	11,369,159	90,626,956	556,864	4,125,228	174,787	630,328	12,100,810	95,382,512
Sullivan	11,943	110,545	8,147	78,759	....	....	20,090	189,304
Total	37,689,496	323,859,218	3,848,420	30,275,721	1,163,808	3,873,512	42,701,724	358,008,451

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

2/ Counties producing dredge coal only.

TABLE 8 . - Pennsylvania anthracite shipped in 1949, by regions and sizes

Size	Breaker shipments 1/								
	Lehigh region			Schuylkill region			Wyoming region		
	Outside region	Local sales	Total	Outside region	Local sales	Total	Outside region	Local sales	Total
NET TONS									
Lump 2/ and Broken	25,582	127	25,709	37,329	2,176	39,505	24,509	16,704	41,213
Egg	188,498	317	188,815	426,082	1,643	427,725	526,968	3,325	530,293
Stove	1,335,215	7,127	1,342,342	2,411,685	49,966	2,461,651	4,524,641	94,099	4,618,740
Chestnut	1,483,421	87,417	1,570,838	3,070,631	158,291	3,228,922	4,884,760	419,517	5,304,277
Pea	501,128	126,499	627,627	1,138,427	161,809	1,300,236	1,028,596	713,501	1,742,097
Total domestic	3,533,844	221,487	3,755,331	7,084,154	373,885	7,458,039	10,989,474	1,247,146	12,236,620
Buckwheat No. 1	846,965	47,526	894,491	1,950,161	82,547	2,032,708	2,068,598	354,128	2,422,726
Buckwheat No. 2 (Rice)	527,746	46,983	574,729	1,222,652	71,220	1,293,872	1,070,649	223,749	1,294,398
Buckwheat No. 3 (Barley)	628,679	10,534	639,213	1,729,378	60,115	1,789,493	924,559	489,995	1,414,554
Buckwheat No. 4	513,268	4	513,272	865,496	261,655	1,127,151	177,117	33,265	210,382
Other (including silt)	439,684	2	439,686	898,298	10,855	909,153	170,963	33,976	204,939
Total steam	2,956,342	105,049	3,061,391	6,665,985	486,392	7,152,377	4,411,886	1,135,113	5,546,999
Grand total	6,490,186	326,536	6,816,722	13,750,139	860,277	14,610,416	15,401,360	2,382,259	17,783,619
VALUE									
Lump 2/ and Broken	$306,451	$1,502	$307,953	$431,373	$25,502	$456,875	$285,876	$185,789	$471,665
Egg	2,226,364	4,026	2,230,390	4,931,257	19,246	4,950,503	6,080,074	40,653	6,120,727
Stove	15,756,916	87,490	15,844,406	27,879,067	580,208	28,459,275	52,534,568	1,154,845	53,689,413
Chestnut	17,525,349	1,091,855	18,617,204	35,691,451	1,874,034	37,565,485	56,666,062	5,160,287	61,826,349
Pea	4,943,540	1,328,664	6,272,204	10,880,109	1,543,739	12,423,848	9,978,920	7,339,933	17,318,853
Total domestic	40,758,620	2,513,537	43,272,157	79,813,257	4,042,729	83,855,986	125,545,500	13,881,507	139,427,007
Buckwheat No. 1	5,623,684	347,466	5,971,150	12,548,365	543,898	13,092,263	13,714,404	2,524,100	16,238,504
Buckwheat No. 2 (Rice)	2,934,608	301,113	3,235,721	6,673,413	378,784	7,052,197	6,031,634	1,353,398	7,385,032
Buckwheat No. 3 (Barley)	2,741,490	51,705	2,793,195	7,371,978	261,069	7,633,047	4,036,789	2,321,989	6,358,778
Buckwheat No. 4	1,657,697	19	1,657,716	2,693,505	769,276	3,462,781	588,818	97,412	686,230
Other (including silt)	1,226,999	5	1,227,004	2,618,513	33,647	2,652,160	479,611	66,392	546,003
Total steam	14,184,478	700,308	14,884,786	31,905,774	1,986,674	33,892,448	24,851,256	6,363,291	31,214,547
Grand total	54,943,098	3,213,845	58,156,943	111,719,031	6,029,403	117,748,434	150,396,756	20,244,798	170,641,554
AVERAGE VALUE PER TON									
Lump 2/ and Broken	$11.98	$11.83	$11.98	$11.56	$11.72	$11.56	$11.66	$11.12	$11.44
Egg	11.81	12.70	11.81	11.57	11.71	11.57	11.54	12.23	11.54
Stove	11.80	12.28	11.80	11.56	11.61	11.56	11.61	12.27	11.62
Chestnut	11.81	12.49	11.85	11.62	11.84	11.63	11.60	12.30	11.66
Pea	9.86	10.50	9.99	9.56	9.54	9.56	9.70	10.29	9.94
Total domestic	11.53	11.35	11.52	11.27	10.81	11.24	11.42	11.13	11.39
Buckwheat No. 1	6.64	7.31	6.68	6.43	6.59	6.44	6.63	7.13	6.70
Buckwheat No. 2 (Rice)	5.56	6.41	5.63	5.46	5.32	5.45	5.63	6.05	5.71
Buckwheat No. 3 (Barley)	4.36	4.91	4.37	4.26	4.34	4.27	4.37	4.74	4.50
Buckwheat No. 4	3.23	4.75	3.23	3.11	2.94	3.07	3.32	2.93	3.26
Other (including silt)	2.79	2.50	2.79	2.91	3.10	2.92	2.81	1.95	2.66
Total steam	4.80	6.67	4.86	4.79	4.08	4.74	5.63	5.61	5.63
Grand total	8.47	9.84	8.53	8.12	7.01	8.06	9.77	8.50	9.60

See footnotes at end of table.

TABLE 8. - Pennsylvania anthracite shipped in 1949, by regions and sizes (Continued)

Size	Breaker shipments 1/ (Continued)								
	Sullivan County			Total					
				Excluding Sullivan County			Including Sullivan County		
	Outside region	Local sales	Total	Outside region	Local sales	Total	Outside region	Local sales	Total
NET TONS									
Lump 2/ and Broken	......	......	......	87,420	19,007	106,427	87,420	19,007	106,427
Egg	......	......	......	1,141,548	5,285	1,146,833	1,141,548	5,285	1,146,833
Stove	3,823	2,688	6,511	8,271,541	151,192	8,422,733	8,275,364	153,880	8,429,244
Chestnut	4,538	3,422	7,960	9,438,812	665,225	10,104,037	9,443,350	668,647	10,111,997
Pea	1,194	489	1,683	2,668,151	1,001,809	3,669,960	2,669,345	1,002,298	3,671,643
Total domestic	9,555	6,599	16,154	21,607,472	1,842,518	23,449,990	21,617,027	1,849,117	23,466,144
Buckwheat No. 1	245	490	735	4,865,724	484,201	5,349,925	4,865,969	484,691	5,350,660
Buckwheat No. 2 (Rice)	......	......	......	2,821,047	341,952	3,162,999	2,821,047	341,952	3,162,999
Buckwheat No. 3 (Barley)	......	......	......	3,282,616	560,644	3,843,260	3,282,616	560,644	3,843,260
Buckwheat No. 4	......	......	......	1,555,881	294,924	1,850,805	1,555,881	294,924	1,850,805
Other (including silt)	2,143	1,058	3,201	1,508,945	44,833	1,553,778	1,511,088	45,891	1,556,979
Total steam	2,388	1,548	3,936	14,034,213	1,726,554	15,760,767	14,036,601	1,728,102	15,764,703
Grand total	11,943	8,147	20,090	35,641,685	3,569,072	39,210,757	35,653,628	3,577,219	39,230,847
VALUE									
Lump 2/ and Broken	......	......	......	$1,023,700	$212,793	$1,236,493	$1,023,700	$212,793	$1,236,493
Egg	......	......	......	13,237,695	63,925	13,301,620	13,237,695	63,925	13,301,620
Stove	$41,899	$29,574	$71,473	96,170,551	1,822,543	97,993,094	96,212,450	1,852,117	98,064,567
Chestnut	49,829	37,635	87,464	109,882,862	8,126,176	118,009,038	109,932,691	8,163,811	118,096,502
Pea	10,606	4,645	15,251	25,802,569	10,212,336	36,014,905	25,813,175	10,216,981	36,030,156
Total domestic	102,334	71,854	174,188	246,117,377	20,437,773	266,555,150	246,219,711	20,509,627	266,729,338
Buckwheat No. 1	1,225	3,233	4,458	31,886,453	3,415,464	35,301,917	31,887,678	3,418,697	35,306,375
Buckwheat No. 2 (Rice)	......	......	......	15,639,655	2,033,295	17,672,950	15,639,655	2,033,295	17,672,950
Buckwheat No. 3 (Barley)	......	......	......	14,150,257	2,634,763	16,785,020	14,150,257	2,634,763	16,785,020
Buckwheat No. 4	......	......	......	4,940,020	866,707	5,806,727	4,940,020	866,707	5,806,727
Other (including silt)	6,986	3,672	10,658	4,325,123	100,044	4,425,167	4,332,109	103,716	4,435,825
Total steam	8,211	6,905	15,116	70,941,508	9,050,273	79,991,781	70,949,719	9,057,178	80,006,897
Grand total	110,545	78,759	189,304	317,058,885	29,488,046	346,546,931	317,169,430	29,566,805	346,736,235
AVERAGE VALUE PER TON									
Lump 2/ and Broken	......	......	......	$11.71	$11.20	$11.62	$11.71	$11.20	$11.62
Egg	......	......	......	11.60	12.10	11.60	11.60	12.10	11.60
Stove	$10.96	$11.00	$10.98	11.63	12.05	11.63	11.63	12.04	11.63
Chestnut	10.98	11.00	10.99	11.64	12.22	11.68	11.64	12.21	11.68
Pea	8.88	9.50	9.06	9.67	10.19	9.81	9.67	10.19	9.81
Total domestic	10.71	10.89	10.78	11.39	11.09	11.37	11.39	11.09	11.37
Buckwheat No. 1	5.00	6.60	6.07	6.55	7.05	6.60	6.55	7.05	6.60
Buckwheat No. 2 (Rice)	......	......	......	5.54	5.95	5.59	5.54	5.95	5.59
Buckwheat No. 3 (Barley)	......	......	......	4.31	4.70	4.37	4.31	4.70	4.37
Buckwheat No. 4	......	......	......	3.18	2.94	3.14	3.18	2.94	3.14
Other (including silt)	3.26	3.47	3.33	2.87	2.23	2.85	2.87	2.26	2.85
Total steam	3.44	4.46	3.84	5.05	5.24	5.08	5.05	5.24	5.08
Grand total	9.26	9.67	9.42	8.90	8.26	8.84	8.90	8.27	8.84

See footnotes at end of table.

TABLE 8. - Pennsylvania anthracite shipped in 1949, by regions and sizes (Continued)

Size	Washery shipments			Dredge shipments			Grand total		
	Outside region	Local sales	Total	Outside region	Local sales	Total	Outside region	Local sales	Total
NET TONS									
Lump 2/ and Broken	....	....	....	....	....	....	87,420	19,007	106,427
Egg	....	....	....	....	....	....	1,141,548	5,285	1,146,833
Stove	12,657	95	12,752	....	....	....	8,288,021	153,975	8,441,996
Chestnut	51,745	4,180	55,925	....	....	....	9,495,095	672,827	10,167,922
Pea	16,096	6,308	22,404	81	517	598	2,685,522	1,009,123	3,694,645
Total domestic	80,498	10,583	91,081	81	517	598	21,697,606	1,860,217	23,557,823
Buckwheat No. 1	43,353	8,446	51,799	9,707	1,152	10,859	4,919,029	494,289	5,413,318
Buckwheat No. 2 (Rice)	43,099	2,640	45,739	4,976	1,378	6,354	2,869,122	345,970	3,215,092
Buckwheat No. 3 (Barley)	101,319	1,350	102,669	182,854	9,375	192,229	3,566,789	571,369	4,138,158
Buckwheat No. 4	442,867	1,719	444,586	136,025	31,210	167,235	2,134,773	327,853	2,462,626
Other (including silt)	668,979	37,694	706,673	322,110	165,137	487,247	2,502,177	248,722	2,750,899
Total steam	1,299,617	51,849	1,351,466	655,672	208,252	863,924	15,991,890	1,988,203	17,980,093
Grand total	1,380,115	62,432	1,442,547	655,753	208,769	864,522	37,689,496	3,848,420	41,537,916
VALUE									
Lump 2/ and Broken	....	....	....	....	....	....	$1,023,700	$212,793	$1,236,493
Egg	....	....	....	....	....	....	13,237,695	63,925	13,301,620
Stove	$139,242	$1,051	$140,293	....	....	....	96,351,692	1,853,168	98,204,860
Chestnut	545,932	46,382	592,314	....	....	....	110,478,623	8,210,193	118,688,816
Pea	143,410	60,213	203,623	$411	$2,594	$3,005	25,956,996	10,279,788	36,236,784
Total domestic	828,584	107,646	936,230	411	2,594	3,005	247,048,706	20,619,867	267,668,573
Buckwheat No. 1	256,030	50,701	306,731	55,074	3,109	58,183	32,198,782	3,472,507	35,671,289
Buckwheat No. 2 (Rice)	224,373	14,839	239,212	24,794	4,773	29,567	15,888,822	2,052,907	17,941,729
Buckwheat No. 3 (Barley)	407,554	5,776	413,330	521,051	22,598	543,649	15,078,862	2,663,137	17,741,999
Buckwheat No. 4	1,341,519	5,157	1,346,676	367,261	80,078	447,339	6,648,800	951,942	7,600,742
Other (including silt)	1,950,770	76,322	2,027,092	712,367	335,323	1,047,690	6,995,246	515,361	7,510,607
Total steam	4,180,246	152,795	4,333,041	1,680,547	445,881	2,126,428	76,810,512	9,655,854	86,466,366
Grand total	5,008,830	260,441	5,269,271	1,680,958	448,475	2,129,433	323,859,218	30,275,721	354,134,939
AVERAGE VALUE PER TON									
Lump 2/ and Broken	....	....	....	....	....	....	$11.71	$11.20	$11.62
Egg	....	....	....	....	....	....	11.60	12.10	11.60
Stove	$11.00	$11.06	$11.00	....	....	....	11.63	12.04	11.63
Chestnut	10.55	11.10	10.59	....	....	....	11.64	12.20	11.67
Pea	8.91	9.55	9.09	$5.07	$5.02	$5.03	9.67	10.19	9.81
Total domestic	10.29	10.17	10.28	5.07	5.02	5.03	11.39	11.08	11.36
Buckwheat No. 1	5.91	6.00	5.92	5.67	2.70	5.36	6.55	7.03	6.59
Buckwheat No. 2 (Rice)	5.21	5.62	5.23	4.98	3.46	4.65	5.54	5.93	5.58
Buckwheat No. 3 (Barley)	4.02	4.28	4.03	2.85	2.41	2.83	4.23	4.66	4.29
Buckwheat No. 4	3.03	3.00	3.03	2.70	2.57	2.67	3.11	2.90	3.09
Other (including silt)	2.92	2.02	2.87	2.21	2.03	2.15	2.80	2.07	2.73
Total steam	3.22	2.95	3.21	2.56	2.14	2.46	4.80	4.86	4.81
Grand total	3.63	4.17	3.65	2.56	2.15	2.46	8.59	7.87	8.53

1/ Figures of shipments from breakers include some culm-bank coal handled in breakers.
2/ Quantity of Lump included is insignificant.

Table 9 . - Estimated weekly production of Pennsylvania anthracite in 1949

Week ended -	Net tons	Week ended -	Net tons	Week ended -	Net tons
Jan. 8	1,033,000	May 14	998,000	Sept. 17	945,000
15	1,051,000	21	1,051,000	24	37,000
22	861,000	28	1,180,000	Oct. 1	68,000
29	653,000	June 4	965,000	8	1,100,000
Feb. 5	687,000	11	1,327,000	15	1,260,000
12	749,000	18	121,000	22	1,231,000
19	698,000	25	1,140,000	29	1,181,000
26	813,000	July 2	63,000	Nov. 5	1,131,000
Mar. 5	697,000	9	849,000	12	1,264,000
12	701,000	16	1,035,000	19	1,134,000
19	189,000	23	1,060,000	26	781,000
26	107,000	30	966,000	Dec. 3	1,018,000
Apr. 2	961,000	Aug. 6	690,000	10	636,000
9	963,000	13	697,000	17	618,000
16	825,000	20	795,000	24	616,000
23	803,000	27	922,000	31	408,000
30	964,000	Sept. 3	888,000		
May 7	983,000	10	789,000	Calendar year	42,702,000

Table 10. - Estimated monthly production of Pennsylvania anthracite, 1942-49, in thousands of net tons[1]

Month	1942	1943	1944	1945	1946	1947	1948	1949
January	4,560	4,466	4,970	4,219	4,968	5,172	4,929	3,725
February	4,801	5,203	5,811	4,471	4,774	4,254	4,682	2,930
March	5,116	5,855	5,512	5,269	5,476	4,984	4,935	2,375
April	5,185	5,337	5,141	5,124	5,069	4,293	4,445	3,725
May	4,873	5,219	5,781	2,083	5,453	4,564	4,874	4,407
June	5,153	3,244	5,558	5,667	3,625	4,624	4,597	3,406
July	5,374	5,698	4,905	4,944	5,248	4,098	4,372	3,925
August	5,212	5,653	5,558	4,656	5,428	5,011	5,129	3,710
September	5,459	5,474	5,380	4,640	5,033	5,158	5,015	2,114
October	5,132	5,359	5,538	5,304	5,393	5,524	4,969	4,979
November	4,824	4,140	5,029	4,559	4,975	4,629	4,687	4,657
December	4,639	4,996	4,518	3,998	5,065	4,879	4,506	2,749
Total	60,328	60,644	63,701	54,934	60,507	57,190	57,140	42,702

[1] Production is estimated from weekly carloadings as reported by the Association of American Railroads and includes mine fuel, coal sold locally, and dredge coal. Includes some "bootleg" coal purchased by legitimate operators and prepared at their breakers.

Table 11. - Truck shipments of Pennsylvania anthracite in 1949, by months and by States of destination, in net tons 1/

Destination	January	February	March	April	May	June	July	August	September	October	November	December	Total	Percent of total trucked
Pennsylvania:														
Within region	383,364	308,053	268,706	289,299	305,222	231,620	121,054	183,524	192,794	322,092	367,753	356,044	3,329,525	54.7
Outside region	212,560	177,281	140,238	139,805	184,608	146,631	118,130	133,254	117,502	177,105	171,306	210,083	1,928,503	31.7
New York	37,437	30,388	26,030	23,262	24,648	28,627	25,886	27,075	20,504	52,441	46,475	44,436	387,209	6.4
New Jersey	35,766	29,282	25,180	23,155	35,307	27,332	25,045	28,026	25,003	45,587	37,970	35,303	372,956	6.1
Delaware	2,527	2,289	2,050	1,194	888	307	186	372	449	1,990	2,548	3,027	17,827	.3
Maryland	4,756	4,513	2,480	1,416	2,924	1,722	1,293	1,380	1,283	3,235	4,022	2,922	31,946	.5
District of Columbia	....	84	117	....	86	....	....	52	....	....	64	....	403	(2)
Other States	2,651	1,689	1,529	1,824	1,360	922	737	697	1,196	2,882	2,008	2,260	19,755	.3
Total: 1949	679,061	553,579	466,330	479,955	555,043	437,161	292,331	374,380	358,731	605,332	632,146	654,075	6,088,124	100.0
1948	791,656	803,077	724,253	577,890	585,467	556,038	526,464	482,944	545,118	699,617	562,657	755,014	7,610,195	100.0

1/ Compiled from reports of Pennsylvania Department of Mines.

2/ Less than 0.05 percent.

Table 12. - Rail shipments of Pennsylvania anthracite, 1946-49, by destinations, in net tons

[Pennsylvania Department of Mines]

Destination	1946	1947	1948	1949
New England States	5,367,460	4,456,476	4,600,429	3,277,034
New York	15,440,475	14,530,238	14,526,250	10,804,020
New Jersey	7,945,666	6,697,055	6,213,667	4,522,749
Pennsylvania	11,360,229	10,138,523	9,706,429	6,935,710
Delaware	287,173	295,288	283,106	237,479
Maryland	918,195	830,546	626,948	396,561
District of Columbia	280,324	228,383	214,291	152,940
Virginia	126,187	116,650	118,611	84,275
Ohio	96,179	98,729	118,735	50,673
Indiana	100,077	78,303	94,492	66,773
Illinois	343,354	285,648	286,888	152,791
Wisconsin	524,066	486,975	627,366	463,625
Minnesota	55,231	19,749	48,683	47,944
Michigan	285,351	354,643	351,304	235,703
Other States	65,502	62,575	57,070	57,148
Total United States	43,195,469	38,679,781	37,874,269	27,485,425
Canada	3,818,303	3,828,980	3,977,698	3,154,387
Other foreign countries	....	1,854,042	913,920	671,350
Grand total	47,013,772	44,362,803	42,765,887	31,311,162

TABLE 13. - Sizes of Pennsylvania anthracite shipped from breakers, 1945-49, by regions, in percent of total
[Note that shipments of dredge and washery coal are not included]

Size	Percent of total shipments									
	Lehigh region					Schuylkill region				
	1945	1946	1947	1948	1949	1945	1946	1947	1948	1949
Lump 1/ and Broken	0.6	0.6	0.7	0.8	0.4	0.1	0.1	0.7	0.7	0.3
Egg	5.8	6.5	5.0	5.7	2.9	5.9	5.2	5.3	5.8	3.1
Stove	19.3	19.2	20.0	20.5	20.6	16.1	17.1	15.9	16.5	17.5
Chestnut	22.1	21.5	21.7	21.6	22.8	21.8	22.7	21.2	21.0	22.3
Pea	8.9	8.2	8.2	8.2	7.7	8.9	8.2	7.6	8.0	8.3
Total domestic	56.7	56.0	55.6	56.8	54.4	52.8	53.3	50.7	52.0	51.5
Buckwheat No. 1	13.6	13.7	13.5	13.0	13.1	15.4	15.0	14.1	14.0	14.2
Buckwheat No. 2 (Rice)	9.2	9.2	8.7	8.6	8.1	9.5	8.5	8.6	8.7	8.9
Buckwheat No. 3 (Barley)	9.9	10.4	10.1	9.3	9.7	14.3	13.9	14.6	14.4	12.6
Buckwheat No. 4	3.5	3.3	5.6	6.4	7.9	6.5	6.8	9.0	6.8	6.3
Other (including silt)	7.1	7.4	6.5	5.9	6.8	1.5	2.5	3.0	4.1	6.5
Total steam	43.3	44.0	44.4	43.2	45.6	47.2	46.7	49.3	48.0	48.5

Size	Wyoming region					Sullivan County				
Lump 1/ and Broken	0.2	0.2	0.3	0.2	0.2	......	......	......	......	......
Egg	7.4	7.3	6.5	6.3	3.4	......	......	......	......	......
Stove	27.6	27.2	27.0	28.3	29.4	25.3	18.9	8.5	20.5	32.0
Chestnut	30.2	30.0	29.5	29.4	31.7	28.4	20.8	29.7	30.9	38.0
Pea	6.3	6.5	6.8	6.5	6.7	12.7	12.3	15.4	10.9	10.0
Total domestic	71.7	71.2	70.1	70.7	71.4	66.4	52.0	53.6	62.3	80.0
Buckwheat No. 1	13.3	12.9	13.1	12.7	13.4	13.0	16.4	10.2	8.0	2.1
Buckwheat No. 2 (Rice)	6.4	6.5	6.5	6.8	7.0	2.3	30.2	.6	......	......
Buckwheat No. 3 (Barley)	6.4	6.3	6.8	6.5	6.0	......	......	......	......	......
Buckwheat No. 4	1.4	2.1	1.7	1.4	1.1	......	......	......	......	......
Other (including silt)	.8	1.0	1.8	1.9	1.1	18.3	1.4	35.6	29.7	17.9
Total steam	28.3	28.8	29.9	29.3	28.6	33.6	48.0	46.4	37.7	20.0

Size	Total									
	Excluding Sullivan County					Including Sullivan County				
Lump 1/ and Broken	0.3	0.3	0.5	0.5	0.2	0.3	0.3	0.5	0.5	0.2
Egg	6.5	6.3	5.8	6.0	3.2	6.5	6.3	5.8	6.0	3.2
Stove	21.7	22.0	21.7	22.5	23.2	21.7	22.0	21.7	22.5	23.2
Chestnut	25.5	25.8	25.1	24.9	26.5	25.5	25.8	25.1	24.9	26.5
Pea	7.8	7.4	7.3	7.4	7.5	7.8	7.4	7.3	7.4	7.5
Total domestic	61.8	61.8	60.4	61.3	60.6	61.8	61.8	60.4	61.3	60.6
Buckwheat No. 1	14.1	13.9	13.5	13.3	13.7	14.1	13.9	13.5	13.3	13.7
Buckwheat No. 2 (Rice)	8.1	7.8	7.7	7.8	7.9	8.1	7.8	7.7	7.8	7.9
Buckwheat No. 3 (Barley)	10.0	9.8	10.3	9.9	9.2	9.9	9.8	10.2	9.9	9.2
Buckwheat No. 4	3.6	4.0	5.1	4.3	4.4	3.6	4.0	5.1	4.3	4.4
Other (including silt)	2.4	2.7	3.0	3.4	4.2	2.5	2.7	3.1	3.4	4.2
Total steam	38.2	38.2	39.6	38.7	39.4	38.2	38.2	39.6	38.7	39.4

1/ Quantity of Lump included is insignificant.

Table 14. - Sizes of Pennsylvania anthracite shipped from breakers to points outside and inside anthracite-producing area in 1949, by regions, in percent of total

[Note that shipments of dredge and washery coal are not included]

Size	Percent of total shipments								
	Lehigh region			Schuylkill region			Wyoming region		
	Sold outside region	Local sales	Total	Sold outside region	Local sales	Total	Sold outside region	Local sales	Total
Lump 1/ and Broken	0.4	(2)	0.4	0.3	0.3	0.3	0.2	0.7	0.2
Egg	2.9	0.1	2.8	3.1	0.2	2.9	3.4	0.1	3.0
Stove	20.6	2.2	19.7	17.5	5.8	16.8	29.4	4.0	26.0
Chestnut	22.8	26.8	23.0	22.3	18.4	22.1	31.7	17.6	29.8
Pea	7.7	38.7	9.2	8.3	18.8	8.9	6.7	30.0	9.8
Total domestic	54.4	67.8	55.1	51.5	43.5	51.0	71.4	52.4	68.8
Buckwheat No. 1	13.1	14.6	13.1	14.2	9.6	13.9	13.4	14.8	13.6
Buckwheat No. 2 (Rice)	8.1	14.4	8.4	8.9	8.3	8.9	7.0	9.4	7.3
Buckwheat No. 3 (Barley)	9.7	3.2	9.4	12.6	7.0	12.2	6.0	20.6	8.0
Buckwheat No. 4	7.9	(2)	7.5	6.3	30.4	7.7	1.1	1.4	1.2
Other (including silt)	6.8	(2)	6.5	6.5	1.2	6.3	1.1	1.4	1.1
Total steam	45.6	32.2	44.9	48.5	56.5	49.0	28.6	47.6	31.2

Size	Sullivan County			Total					
				Excluding Sullivan County			Including Sullivan County		
Lump 1/ and Broken	-------	-------	-------	0.2	0.5	0.3	0.2	0.5	0.3
Egg	-------	-------	-------	3.2	0.2	2.9	3.2	0.2	2.9
Stove	32.0	33.0	32.4	23.2	4.2	21.5	23.2	4.3	21.5
Chestnut	38.0	42.0	39.6	26.5	18.6	25.8	26.5	18.7	25.8
Pea	10.0	6.0	8.4	7.5	28.1	9.3	7.5	28.0	9.3
Total domestic	80.0	81.0	80.4	60.6	51.6	59.8	60.6	51.7	59.8
Buckwheat No. 1	2.1	6.0	3.7	13.7	13.6	13.6	13.7	13.5	13.6
Buckwheat No. 2 (Rice)	-------	-------	-------	7.9	9.6	8.1	7.9	9.6	8.1
Buckwheat No. 3 (Barley)	-------	-------	-------	9.2	15.7	9.8	9.2	15.7	9.8
Buckwheat No. 4	-------	-------	-------	4.4	8.3	4.7	4.4	8.2	4.7
Other (including silt)	17.9	13.0	15.9	4.2	1.2	4.0	4.2	1.3	4.0
Total steam	20.0	19.0	19.6	39.4	48.4	40.2	39.4	48.3	40.2

1/ Quantity of Lump included is insignificant.
2/ Less than 0.05 percent.

Table 15. - Number of men employed in "bootleg" operations in the Pennsylvania anthracite industry, 1941-49

[Anthracite Committee, Harrisburg, Pa.]

Date of survey	Number of "bootleg" operations	Average number of men employed	Date of survey	Number of "bootleg" operations	Average number of men employed
March 31, 1941	3,006	10,762	March 7, 1945	502	1,806
May 1, 1942	2,029	7,554	March 30, 1946	526	1,939
December 15, 1942	1,363	4,967	March 31, 1947	863	2,817
April 20, 1943	1,065	3,607	March 31, 1948	835	2,825
October 14, 1943	791	2,725	March 31, 1949	772	2,617
March 31, 1944	652	2,220	February 28, 1950	868	2,928

Table 16. - Production, purchases by recognized operators, and fatalities at "bootleg" operations in the Pennsylvania anthracite industry, 1941-49

Year	Production (net tons) 1/	Purchased for preparation by recognized operations (net tons) 2/	Number of fatalities 1/	Year	Production (net tons) 1/	Purchased for preparation by recognized operations (net tons) 2/	Number of fatalities 1/
1941	6,300,000	1,902,481	61	1945	1,026,000	260,342	16
1942	3,931,000	2,616,839	45	1946	1,448,529	352,112	19
1943	1,912,467	1,265,617	22	1947	1,634,635	604,060	15
1944	1,332,957	506,842	21	1948	1,839,227	544,475	12
				1949	1,257,218	442,541	9

1/ Anthracite Committee, Harrisburg, Pa.
2/ As reported to Federal Bureau of Mines.

TABLE 17. - Average sales realization per net ton on Pennsylvania anthracite shipments from breakers, 1945-49, by regions and sizes

[Value does not include margins of separately incorporated sales companies]

Size	Lehigh region					Schuylkill region				
	1945	1946	1947	1948	1949	1945	1946	1947	1948	1949
Lump 1/ and Broken	$7.98	$9.14	$10.21	$11.47	$11.98	$8.17	$9.43	$10.10	$11.09	$11.56
Egg	8.10	9.32	10.23	11.42	11.81	8.18	9.48	10.11	11.22	11.57
Stove	8.11	9.42	10.23	11.44	11.80	8.18	9.52	10.02	11.34	11.56
Chestnut	8.09	9.40	10.24	11.45	11.81	8.20	9.54	10.07	11.38	11.62
Pea	6.56	7.72	8.44	9.50	9.86	6.66	7.89	8.17	9.33	9.56
Total domestic	7.86	9.15	9.97	11.16	11.53	7.93	9.27	9.77	11.03	11.27
Buckwheat No. 1	4.76	5.51	5.97	6.52	6.64	4.80	5.55	5.76	6.39	6.43
Buckwheat No. 2 (Rice)	3.87	4.50	4.93	5.53	5.56	3.89	4.54	4.78	5.37	5.46
Buckwheat No. 3 (Barley)	2.67	3.09	3.57	4.14	4.36	2.61	3.09	3.52	4.03	4.26
Buckwheat No. 4	2.02	2.26	2.65	2.96	3.23	1.81	2.14	2.39	2.84	3.11
Other (including silt)	1.62	1.95	2.21	2.50	2.79	1.48	1.83	2.16	2.68	2.91
Total steam	3.36	3.88	4.25	4.73	4.80	3.43	3.94	4.09	4.68	4.79
Total all sizes	5.91	6.83	7.43	8.38	8.47	5.81	6.78	6.97	7.98	8.12

Size	Wyoming region					Sullivan County				
Lump 1/ and Broken	$8.00	$9.26	$9.87	$11.06	$11.66	......	......	......	......	......
Egg	8.11	9.33	10.01	11.15	11.54	......	......	......	......	......
Stove	8.07	9.33	9.98	11.24	11.61	$7.41	$9.19	$11.36	$9.67	$10.96
Chestnut	8.09	9.34	9.98	11.20	11.60	7.53	9.13	10.20	9.59	10.98
Pea	6.60	7.74	8.19	9.31	9.70	6.40	7.95	9.28	7.86	8.88
Total domestic	7.95	9.29	9.81	11.04	11.42	7.27	8.87	10.12	9.31	10.71
Buckwheat No. 1	4.79	5.51	5.81	6.50	6.63	4.08	4.70	3.98	5.99	5.00
Buckwheat No. 2 (Rice)	3.95	4.52	4.84	5.48	5.63	2.55	2.62	3.14	......	......
Buckwheat No. 3 (Barley)	2.72	3.16	3.63	4.15	4.37	......	......	......	......	......
Buckwheat No. 4	1.82	1.85	2.49	3.01	3.32	......	......	......	......	......
Other (including silt)	1.48	1.86	1.74	2.13	2.81	2.27	1.75	1.93	4.10	3.26
Total steam	3.89	4.38	4.67	5.30	5.63	2.99	3.31	2.39	4.50	3.44
Total all sizes	6.80	7.81	8.27	9.35	9.77	5.83	6.20	6.54	7.50	9.26

Size	Total									
	Excluding Sullivan County					Including Sullivan County				
Lump 1/ and Broken	$8.02	$9.23	$10.07	$11.19	$11.71	$8.02	$9.23	$10.07	$11.19	$11.71
Egg	8.13	9.38	10.08	11.22	11.60	8.13	9.38	10.08	11.22	11.60
Stove	8.11	9.40	10.03	11.30	11.63	8.10	9.40	10.03	11.29	11.63
Chestnut	8.12	9.42	10.05	11.30	11.64	8.12	9.42	10.05	11.29	11.64
Pea	6.62	7.79	8.23	9.36	9.67	6.62	7.79	8.23	9.35	9.67
Total domestic	7.93	9.21	9.82	11.05	11.39	7.93	9.21	9.82	11.05	11.39
Buckwheat No. 1	4.79	5.53	5.82	6.46	6.55	4.79	5.53	5.82	6.46	6.55
Buckwheat No. 2 (Rice)	3.91	4.52	4.83	5.45	5.54	3.91	4.52	4.83	5.45	5.54
Buckwheat No. 3 (Barley)	2.65	3.11	3.56	4.09	4.31	2.65	3.11	3.56	4.09	4.31
Buckwheat No. 4	1.85	2.09	2.46	2.89	3.18	1.85	2.09	2.46	2.89	3.18
Other (including silt)	1.57	1.90	2.06	2.49	2.87	1.58	1.90	2.06	2.50	2.87
Total steam	3.56	4.08	4.32	4.90	5.05	3.56	4.08	4.32	4.90	5.05
Total all sizes	6.26	7.25	7.65	8.67	8.90	6.26	7.25	7.65	8.67	8.90

1/ Quantity of Lump included is insignificant.

TABLE 18.— Average sales realization per net ton on Pennsylvania anthracite shipments from breakers to points outside and inside anthracite-producing area in 1949, by regions and sizes

[Value does not include margins of separately incorporated sales companies]

Size	Lehigh region			Schuylkill region			Wyoming region		
	Sold outside region	Local sales	Total	Sold outside region	Local sales	Total	Sold outside region	Local sales	Total
Lump 1/ and Broken..........	$11.98	$11.83	$11.98	$11.56	$11.72	$11.56	$11.66	$11.12	$11.44
Egg........................	11.81	12.70	11.81	11.57	11.71	11.57	11.54	12.23	11.54
Stove......................	11.80	12.28	11.80	11.56	11.61	11.56	11.61	12.27	11.62
Chestnut...................	11.81	12.49	11.85	11.62	11.84	11.63	11.60	12.30	11.66
Pea........................	9.86	10.50	9.99	9.56	9.54	9.56	9.70	10.29	9.94
Total domestic.......	11.53	11.35	11.52	11.27	10.81	11.24	11.42	11.13	11.39
Buckwheat No. 1............	6.64	7.31	6.68	6.43	6.59	6.44	6.63	7.13	6.70
Buckwheat No. 2 (Rice).....	5.56	6.41	5.63	5.46	5.32	5.45	5.63	6.05	5.71
Buckwheat No. 3 (Barley)...	4.36	4.91	4.37	4.26	4.34	4.27	4.37	4.74	4.50
Buckwheat No. 4............	3.23	4.75	3.23	3.11	2.94	3.07	3.32	2.93	3.26
Other (including silt).....	2.79	2.50	2.79	2.91	3.10	2.92	2.81	1.95	2.66
Total steam..........	4.80	6.67	4.86	4.79	4.08	4.74	5.63	5.61	5.63
Total all sizes......	8.47	9.84	8.53	8.12	7.01	8.06	9.77	8.50	9.60

Size	Sullivan County			Total					
				Excluding Sullivan County			Including Sullivan County		
Lump 1/ and Broken..........	....	....	....	$11.71	$11.20	$11.62	$11.71	$11.20	$11.62
Egg........................	....	....	....	11.60	12.10	11.60	11.60	12.10	11.60
Stove......................	$10.96	$11.00	$10.98	11.63	12.05	11.63	11.63	12.04	11.63
Chestnut...................	10.98	11.00	10.99	11.64	12.22	11.68	11.64	12.21	11.68
Pea........................	8.88	9.50	9.06	9.67	10.19	9.81	9.67	10.19	9.81
Total domestic.......	10.71	10.89	10.78	11.39	11.09	11.37	11.39	11.09	11.37
Buckwheat No. 1............	5.00	6.60	6.07	6.55	7.05	6.60	6.55	7.05	6.60
Buckwheat No. 2 (Rice).....	....	....	....	5.54	5.95	5.59	5.54	5.95	5.59
Buckwheat No. 3. (Barley)..	....	....	....	4.31	4.70	4.37	4.31	4.70	4.37
Buckwheat No. 4............	....	....	....	3.18	2.94	3.14	3.18	2.94	3.14
Other (including silt).....	3.26	3.47	3.33	2.87	2.23	2.85	2.87	2.26	2.85
Total steam..........	3.44	4.46	3.84	5.05	5.24	5.08	5.05	5.24	5.08
Total all sizes......	9.26	9.67	9.42	8.90	8.26	8.84	8.90	8.27	8.84

1/ Quantity of lump included is insignificant.

TABLE 19. --Average value per ton of Pennsylvania anthracite shipments, local sales, colliery fuel, and total production, 1948-49, by regions 1/

[Values include washery and dredge coal]

Region	1948				1949			
	Shipments	Local sales	Colliery fuel	Total production	Shipments	Local sales	Colliery fuel	Total production
Lehigh......................	$8.17	$9.57	$5.81	$8.18	$8.23	$9.83	$6.31	$8.26
Schuylkill..................	7.60	6.21	2.66	7.44	7.73	6.10	2.40	7.56
Wyoming.....................	9.17	8.45	2.59	8.75	9.55	8.36	2.95	9.13
Total, excluding Sullivan County.......	8.39	7.89	3.01	8.17	8.59	7.86	3.33	8.38
Sullivan County..............	7.50	7.53	....	7.51	9.26	9.67	....	9.42
Grand total...........	8.39	7.89	3.01	8.17	8.59	7.87	3.33	8.38

1/ Value given for shipments is value at which coal left possession of producing company and does not include margins of separately incorporated sales companies.

TABLE 20 —Total supplies of fuels commonly used for space-heating purposes in the United States, 1937 and 1946-49

[Wherever available, figures represent quantity actually consumed for domestic heating or for space heating offices, apartments, hotels, schools, hospitals, etc. Where such figures are not available but where the fuel is known to be used chiefly for domestic or space-heating purposes, total production (or imports) is shown to indicate trend of growth]

	1937	1946	1947	1948	1949
SOLID FUELS (NET TONS)					
Anthracite:					
Production:					
Shipments of domestic sizes.............	29,092,974	31,607,802	29,210,251	29,509,890	21,697,606
Shipments of Buckwheat No. 1............	6,859,707	7,181,843	6,557,076	6,409,788	4,919,029
Shipments of smaller steam sizes 1/.....	10,250,463	15,318,942	15,285,086	14,563,514	11,072,861
Local sales.............................	2,981,391	4,435,536	4,232,871	4,795,721	3,848,420
Total commercial production............	49,184,535	58,544,123	55,285,284	55,278,913	41,537,916
Exports 2/..............................	1,914,173	6,497,245	8,509,995	6,675,914	4,942,670
Imports for consumption 2/..............	395,737	9,556	10,350	945	....
Fuel briquets 3/............................	977,254	2,841,341	2,923,223	2,920,921	2,237,196
Packaged-fuel production....................	146,037	190,919	182,881	157,013	125,948
Coke:					
Oven-coke sales for domestic use........	7,807,792	4,947,085	3,917,402	3,398,696	2,740,987
Beehive sales for domestic use..........	299,726	149,648	59,926	46,613	14,853
Imports for consumption 2/..............	286,364	52,188	104,093	161,400	277,507
Retort-coke sales...........................	4/350,700	355,336	282,666	199,123	140,236
Petroleum-coke production...................	1,306,600	2,124,200	2,415,400	2,898,800	3,391,800
Anthracite and semianthracite production outside of Pennsylvania................	468,852	(5)	(5)	(5)	(5)
Lignite production 6/.......................	3,218,419	2,667,619	2,873,653	3,085,886	3,092,130
Bituminous-coal sales for domestic use....	(7)	(7)	(7)	(7)	(7)
OIL (BARRELS OF 42 GALLONS)					
Oil sales for heating buildings:					
Range oil...............................	32,259,000	60,564,000	74,114,000	84,163,000	8/ 78,529,000
Heating oils (domestic and commercial)9/	116,617,000	189,371,000	234,761,000	258,663,000	8/254,902,000
Liquefied petroleum gases (domestic)......	972,000	18,059,000	27,394,000	35,078,000	38,751,000
GAS (MILLION CUBIC FEET)					
Natural-gas consumption for domestic and commercial use 10/......................	489,234	902,622	1,087,363	1,219,402	8/1,366,000
Manufactured-gas sales for: 11/					
Residential use.........................	210,959	272,797	291,274	295,797	(12)
Commercial use..........................	42,631	62,571	68,566	71,558	(12)

1/A considerable part of the smaller steam sizes is used by industries, railroads, and public utilities.
2/U.S. Department of Commerce.
3/Production plus imports less exports.
4/Partly estimated.
5/Data not available.
6/An estimated one-half of total production shown is used for domestic purposes.
7/Exact data not available.
8/Estimated.
9/Includes all grades of fuel oil used for heating buildings.
10/Includes gas used for heating offices, hotels, apartments, hospitals, stores, and other large buildings, as well as houses.
11/American Gas Association.
12/Data not yet available.

TABLE 21. - Apparent consumption of anthracite and selected competitive fuels in the principal anthracite markets, 1946-49

[Thousands of net tons]

Fuel	New England	New York	New Jersey	Pennsylvania	Delaware	Maryland	District of Columbia	Total	Percent of total fuels
Anthracite:									
All users: 1/									
1946	5,367	2/16,103	2/8,663	17,525	322	980	281	49,241	56.0
1947	4,457	2/14,924	2/7,177	16,127	316	895	228	44,124	48.3
1948	4,600	2/15,004	2/6,806	16,116	313	709	215	43,763	45.6
1949	3,277	2/11,191	2/4,896	12,194	255	429	153	32,395	40.1
Imports: 3/									
1946	....	....	....	....	....	....	....	....	....
1947	....	7	....	....	....	....	....	7	(4)
1948	....	....	....	....	....	1	....	1	(4)
1949	....	....	....	....	....	....	....	....	....
Briquets:									
Domestic use:									
1946	121	94	28	50	4	21	2	320	.4
1947	49	49	32	126	1	29	2	288	.3
1948	59	44	26	88	1	24	3	245	.3
1949	25	21	21	39	(5)	15	1	122	.2
Imports: 3/									
1946	....	....	....	....	....	....	....	(5)	(4)
1947	....	....	....	....	....	....	....	(5)	(4)
1948	....	....	....	....	....	....	....	....	....
1949	....	....	....	....	....	....	....	(5)	(4)
Coke:									
Domestic use:									
1946	1,085	987	469	291	3	5	(5)	2,840	3.2
1947	834	693	407	220	(5)	1	....	2,155	2.4
1948	778	689	386	242	1	(5)	....	2,096	2.2
1949	592	510	281	168	(5)	1	....	1,552	1.9
Imports: 3/									
1946	(5)	11	....	....	....	....	....	11	(4)
1947	1	....	....	....	....	....	....	1	(4)
1948	1	38	....	....	....	....	....	39	(4)
1949	1	83	....	....	....	....	....	84	(4)
Oil: Heating and range 6/									
1946	12,924	11,554	5,713	3,175	184	1,327	665	35,542	40.4
1947	16,855	12,940	7,153	4,880	257	1,929	793	44,807	49.0
1948	18,652	14,390	8,224	5,207	278	2,256	776	49,783	51.9
1949	17,353	14,086	7,735	4,418	433	2,048	713	46,786	57.8
Total fuel: 7/									
1946	19,497	28,749	14,873	21,041	513	2,333	948	87,954	100.0
1947	22,196	28,613	14,769	21,353	574	2,854	1,023	91,382	100.0
1948	24,090	30,165	15,442	21,653	593	2,990	994	95,927	100.0
1949	21,248	25,891	12,933	16,819	688	2,493	867	80,939	100.0

1/ Pennsylvania Department of Mines; illicit coal not included.
2/ An important but undetermined part of anthracite shown as shipped to New Jersey is reshipped to New York City.
3/ U. S. Department of Commerce.
4/ Less than 0.05 percent.
5/ Less than 1,000 tons.
6/ Converted to coal equivalent upon basis of 4 barrels of fuel oil equaling 1 ton of coal.
7/ Excludes bituminous coal.

TABLE 22. - Men employed and days worked at operations producing Pennsylvania anthracite in 1949, by regions 1/
[Includes operations of strip contractors]

Region	Average number of men employed								Average number of days plant operated	Man-days of labor	Average tons per man per day
	Underground			Surface				Grand total			
	Miners and their laborers	Other	Total underground	In strip pits	In preparation plant	Other	Total surface				
Lehigh:											
Breaker	4,922	2,886	7,808	1,762	842	2,150	4,754	12,562	190	2,382,950	2/2.93
Washery 3/	......	......	......	.....	42	75	117	117	139	16,242	16.98
Dredge	......	......	......	.....	2	4	6	6	203	1,218	18.17
Total Lehigh	4,922	2,886	7,808	1,762	886	2,229	4,877	12,685	189	2,400,410	2/3.03
Schuylkill:											
Breaker	7,634	4,397	12,031	4,057	2,004	3,826	9,887	21,918	182	3,995,639	2/3.60
Washery 3/	......	......	......	31	90	226	347	347	151	52,460	11.11
Dredge	......	......	......	.....	129	238	367	367	227	83,262	9.94
Total Schuylkill	7,634	4,397	12,031	4,088	2,223	4,290	10,601	22,632	183	4,131,361	2/3.82
Wyoming:											
Breaker	20,249	10,486	30,735	1,536	1,864	5,642	9,042	39,777	205	8,139,648	2.28
Washery 3/	......	......	......	.....	76	104	180	180	173	31,088	18.80
Dredge	......	......	......	.....	4	3	7	7	200	1,400	10.71
Total Wyoming	20,249	10,486	30,735	1,536	1,944	5,749	9,229	39,964	204	8,172,136	2.35
Total, excluding Sullivan County:											
Breaker	32,805	17,769	50,574	7,355	4,710	11,618	23,683	74,257	196	14,518,237	2/2.75
Washery 3/	......	......	......	31	208	405	644	644	155	99,790	14.46
Dredge	......	......	......	.....	135	245	380	380	226	85,880	10.07
Total	32,805	17,769	50,574	7,386	5,053	12,268	24,707	75,281	195	14,703,907	2/2.87
Sullivan County	54	23	77	.....	14	5	19	96	121	11,616	1.73
Grand total	32,859	17,792	50,651	7,386	5,067	12,273	24,726	75,377	195	14,715,523	2/2.87

1/ Men employed in "bootleg" operations excluded.
2/ Output per man per day calculated on legitimate tonnages only; "bootleg" purchases excluded.
3/ Represents washeries for which both production and employment were separately reported.

Table 23.- Men employed at operations producing Pennsylvania Anthracite, 1948-49, by counties

[Includes operations of strip contractors]

County	1948	1949	County	1948	1949
Berks, Lancaster, Lebanon, Northampton, and Snyder 1/	2/148	125	Northumberland	5,977	5,747
Carbon	4,812	5,131	Schuylkill	17,261	17,975
Columbia	2,118	2,004	Sullivan	123	96
Dauphin	213	230	Susquehanna and Wayne	43	3/ 21
Lackawanna	11,707	11,520			
Luzerne	33,813	32,528	Total	76,215	75,377

1/Counties producing dredge coal only.
2/None in Berks in 1949.
3/None in Wayne in 1949.

Table 24. - Relative growth of Pennsylvania anthracite mined from strip pits, 1915, 1920, 1925, 1930 and 1944-49

	Net tons mined by stripping	Percent of fresh-mined total that was stripped	Number of men employed	Average number of days worked
1915	1,121,603	(1)	(1)	(1)
1920	2,054,441	2.5	(1)	(1)
1925	1,578,478	2.7	(1)	(1)
1930	2,536,288	3.7	(1)	(1)
1944	10,953,030	20.8	5,595	246
1945	10,056,325	22.4	5,314	238
1946	12,858,930	25.2	6,152	252
1947	12,603,545	25.4	7,264	242
1948	13,352,874	26.5	7,005	260
1949:				
Lehigh region	2,431,915	37.0	1,762	201
Schuylkill region	5,689,301	45.1	4,088	189
Wyoming region	2,255,592	12.4	1,536	219
Total 2/	10,376,808	27.7	7,386	198

1/ Data not available.
2/ No production by stripping in Sullivan County.

Table 25. - Power shovels and draglines used in stripping Pennsylvania anthracite, by type of power, 1947-49

Type of power	1947			1948			1949		
	Number of power shovels	Number of draglines	Total	Number of power shovels	Number of draglines	Total	Number of power shovels	Number of draglines	Total
Gasoline	75	23	98	65	8	73	66	20	86
Electric	47	46	93	54	46	100	53	45	98
Diesel	158	256	414	182	256	438	189	253	442
All other	4	----------	4	3	----------	3	1	----------	1
Total	284	325	609	304	310	614	309	318	627

Table 26. - Pennsylvania anthracite produced by dredges in 1949, by rivers

River (including tributaries)	Net tons	Value	
		Total	Average
Lehigh	22,131	$39,256	$1.77
Schuylkill	52,012	137,878	2.65
Susquehanna	790,979	1,953,962	2.47
Total	865,122	2,131,096	2.46

TABLE 27.--Relative growth of mechanical loading, hand loading, and stripping in Pennsylvania anthracite mines, 1927-49

[Mechanical loading includes coal handled on pit-car loaders and hand-loaded face conveyors]

Year	Net tons			Index numbers: 1937=100		
	Mechanical loading underground	Stripping	Hand loading	Mechanical loading underground	Stripping	Hand loading
1927........	1/2,223,281	2,153,156	71,434,537	20	38	224
1928........	1/2,351,074	2,422,924	67,373,788	22	43	211
1929........	3,470,158	1,911,766	66,493,690	32	34	209
1930........	4,467,750	2,536,288	60,458,344	42	45	190
1931........	4,384,780	3,813,237	49,074,722	41	67	154
1932........	5,433,340	3,980,973	38,400,820	51	70	120
1933........	6,557,267	4,932,069	34,474,844	61	87	108
1934........	9,284,486	5,798,138	39,290,255	87	102	123
1935........	9,279,057	5,187,072	34,503,819	87	91	108
1936........	10,827,946	6,203,267	33,898,560	101	109	106
1937........	10,683,837	5,696,018	31,882,514	100	100	100
1938........	10,151,669	5,095,341	27,990,628	95	89	88
1939........	11,773,833	5,486,479	30,797,715	110	96	97
1940........	12,326,000	6,352,700	29,190,837	115	112	92
1941........	13,441,987	7,316,574	30,435,277	126	128	95
1942........	14,741,459	9,070,933	30,495,240	138	159	96
1943........	14,745,793	8,989,387	27,990,005	138	158	88
1944........	14,975,146	10,953,030	26,800,270	140	192	84
1945........	13,927,955	10,056,325	20,957,744	130	177	66
1946........	15,619,162	12,858,930	22,465,295	146	226	70
1947........	16,054,011	12,603,545	20,909,101	150	221	66
1948........	15,742,368	13,352,874	21,432,923	147	234	67
1949........	11,858,088	10,376,808	15,172,562	111	182	48

1/ As reported by Commonwealth of Pennsylvania, Department of Mines.

TABLE 28.--Pennsylvania anthracite loaded mechanically underground, 1948-49, by fields, in net tons

Field	Scraper loaders 1/		Pit-car loaders		Hand-loaded face conveyors, all types 2/		Total mechanically loaded underground	
	1948	1949	1948	1949	1948	1949	1948	1949
Northern...........	3/2,394,262	1,740,584	87,219	100,844	11,096,707	8,202,674	13,578,188	10,044,102
Eastern Middle.....	114,481	67,981	101,351	64,286	406,148	264,410	621,980	396,677
Western Middle.....	257,074	192,225	55,161	38,470	900,116	689,488	1,212,351	920,183
Southern...........	16,020	29,817	15,542	30,000	298,287	437,309	329,849	497,126
Total........	2,781,837	2,030,607	259,273	233,600	12,701,258	9,593,881	15,742,368	11,858,088

1/Includes mobile loaders

2/Shaker chutes, etc., including those equipped with duckbills.

3/Corrected figure.

Table 29. - Pennsylvania anthracite loaded mechanically underground, 1945-49

Year	Scrapers		Mobile loaders		Conveyors and Pit-car loaders 1/		Total loaded mechanically	
	Number of units	Net tons loaded	Number of units	Net tons loaded	Number of units	Net tons loaded	Number of units	Net tons loaded
1945------	548	2,747,254	20	146,209	3,006	11,034,492	3,574	13,927,955
1946------	564	2,714,051	27	81,545	3,233	12,823,566	3,824	15,619,162
1947------	594	2,371,370	25	132,237	3,457	13,550,404	4,076	16,054,011
1948------	643	2,721,180	19	60,657	3,562	12,960,531	4,224	15,742,368
1949------	589	1,950,503	27	80,104	3,618	9,827,481	4,234	11,858,088

1/ Includes duckbills and other self-loading conveyors.

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UNITED STATES DEPARTMENT OF THE INTERIOR
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MINERAL MARKET REPORT
MMS NO. 1911

SAND AND GRAVEL PRODUCTION DECREASED SLIGHTLY IN 1949

The production of sand and gravel in 1949, as reported to the Bureau of Mines, Department of the Interior, amounted to 319,104,000 short tons valued at $248,443,000. This output declined slightly from the record 1948 level of 319,266,000 tons valued at $252,498,000, but was still well above the previous record established in 1942. Approximately 72 percent of the total production was supplied by commercial plants and 28 percent by Federal, State, county, and municipal governments.

California, in 1949, was the largest producer, followed by Michigan, New York, Illinois, Wisconsin, Texas, Ohio, Minnesota, and Pennsylvania in that order. These nine States, each with an output exceeding 11,000,000 short tons, accounted for 51 percent of the total production.

COMMERCIAL PRODUCTION

Sales of sand and gravel by commercial producers amounted to 231,205,478 short tons - a decrease of 1 percent from the 233,503,522 tons produced in 1948.

As indicated in the accompanying table, sales in 1949 of industrial sands by commercial operators exhibited wide variations in changes from the 1948 figures. Sales of molding and engine sand suffered the greatest decreases while the output of glass, grinding and polishing; and fire or furnace sand was only slightly below 1948 levels. Sales of sand for building were virtually unchanged, while increases were recorded in the sales of all other classes of material. Production of gravel by commercial operators increased for all classes with the exception of material used for railroad ballast. Output of this gravel was about three-fourths of the 1948 production.

Glass sand.- Sales of glass sand totaled 4,339,033 short tons with an average value of $2.48 per ton - a decrease of about 5 percent from 1948 output. Leading producing States in the order named were Illinois, West Virginia, Pennsylvania, and New Jersey.

Molding sand.- The output of molding sand was 6,113,520 short tons - off 26 percent from 1948 totals. The average value was $1.66 - up 10 cents from 1948. Michigan, New Jersey, Illinois and Ohio were leading producers.

Prepared by D. G. Runner and C. E. Tucker, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

Grinding and polishing (including blast sand).- Sales of this sand decreased about 4 percent in 1949 - and totaled 1,000,186 short tons with an average value of $1.91 per ton. Principal producing States were Pennsylvania, Michigan, Missouri, and Illinois.

Fire or furnace sand.- Production in 1949 decreased approximately 1 percent to 318,373 short tons with an average value of $1.35. States leading in production were Indiana, Pennsylvania, Ohio, and West Virginia.

Engine sand.- The output of engine sand in 1949 declined 23 percent to 1,883,580 short tons, averaging 97 cents per ton. Pennsylvania, West Virginia, Indiana, and Alabama were chief producing States.

Filter sand.- There was an increase of 20 percent in the production of filter sand in 1949. Totals were 189,243 short tons valued at $376,596 - or an average of $1.99 per ton. States leading in production were New York, New Jersey, Ohio, and California.

Preparation.- Washed, screened or otherwise prepared sand and gravel comprised 91 percent (210,756,159 short tons) of the total commercial production. The average value was 96 cents per ton compared with 47 cents for unprepared material.

Transportation.- Of the total commercial production, 57 percent was reported to have been moved by truck, 30 percent by rail, 8 percent by waterway, and 5 percent was unspecified as to method of transportation.

GOVERNMENT-AND-CONTRACTOR OPERATIONS

The production of sand and gravel from noncommercial or Government-and-contractor operations in 1949 accounted for 28 percent of the total tonnage compared with 27 percent in 1948. The value of this output represented 15 percent of the total dollar value for the industry. The combined total of sand and gravel used on Government-and-contractor operations was at a higher level than in 1948, with all types of material registering increases except building gravel. States reported 50 percent of the total, counties 39, municipalities 2, and Federal agencies 9. Twenty-eight percent of the total was classified as prepared with an average value of 91 cents per ton while unprepared material was valued at 23 cents per ton.

Sand and gravel sold or used by producers in the United States, 1948-49, by commercial and Government-and-contractor operations and by uses

	1948			1949		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
COMMERCIAL OPERATIONS						
Sand:						
Glass	4,542,260	$10,770,845	$2.37	4,339,033	$10,772,151	$2.48
Molding	8,265,451	12,892,392	1.56	6,113,520	10,140,458	1.66
Building	59,357,062	47,102,476	.79	59,307,353	47,879,130	.81
Paving	31,127,243	25,018,409	.80	31,520,407	25,849,473	.82
Grinding and polishing 1/	1,119,802	2,151,095	1.92	1,080,886	2,063,866	1.91
Fire or furnace	322,576	492,128	1.53	318,373	429,512	1.35
Engine	2,445,454	2,439,135	1.00	1,883,580	1,830,549	.97
Filter	158,269	382,600	2.42	189,243	376,596	1.99
Railroad ballast 2/	869,699	374,498	.43	955,996	407,234	.43
Other 3/	1,588,814	2,027,982	1.28	2,300,240	1,961,224	.85
Total commercial sand	109,796,630	103,651,560	.94	108,008,631	101,710,193	.94
Gravel:						
Building	48,679,419	48,315,368	.99	49,788,200	49,319,528	.99
Paving	58,775,303	49,639,057	.84	60,571,091	52,972,235	.87
Railroad ballast 4/	14,033,722	7,888,283	.56	10,444,070	5,618,124	.54
Other 5/	2,218,448	1,825,464	.82	2,393,486	1,716,039	.72
Total commercial gravel	123,706,892	107,668,172	.87	123,196,847	109,625,926	.89
Total commercial sand and gravel	233,503,522	211,319,732	.90	231,205,478	211,336,119	.91
GOVERNMENT-AND-CONTRACTOR OPERATIONS 6/						
Sand:						
Building	1,529,000	811,000	.53	1,604,000	959,000	.60
Paving	7,336,000	3,452,000	.47	7,424,000	2,820,000	.38
Total Government-and-contractor sand	8,865,000	4,263,000	.48	9,028,000	3,779,000	.42
Gravel:						
Building	5,487,000	3,405,000	.62	3,133,000	2,235,000	.71
Paving	71,411,000	33,510,000	.47	75,738,000	31,093,000	.41
Total Government-and-contractor gravel	76,898,000	36,915,000	.48	78,871,000	33,328,000	.42
Total Government-and-contractor sand and gravel	85,763,000	41,178,000	.48	87,899,000	37,107,000	.42
COMMERCIAL AND GOVERNMENT-AND-CONTRACTOR OPERATIONS						
Sand	118,661,000	107,915,000	.91	117,036,000	105,489,000	.90
Gravel	200,605,000	144,583,000	.72	202,068,000	142,954,000	.71
Grand total	319,266,000	252,498,000	.79	319,104,000	248,443,000	.78

See footnotes on following page.

1/ Includes blast sand as follows—1948: 381,455 tons valued at $1,189,530; 1949: 393,427 tons, $1,222,513.

2/ Includes ballast sand produced by railroads for their own use as follows—1948: 87,684 tons valued at $7,321; 1949: 169,219 tons, $13,748.

3/ Includes some sand used by railroads for fills and similar purposes as follows—1948: 197,379 tons valued at $34,213; 1949: 406,344 tons, $101,177.

4/ Includes ballast gravel produced by railroads for their own use as follows—1948: 5,126,293 tons valued at $1,823,741; 1949: 4,406,251 tons, $1,748,602.

5/ Includes some gravel used by railroads for fills and similar purposes as follows—1948: 1,145,673 tons valued at $478,907; 1949: 759,841 tons, $240,217.

6/ Approximate figures for States, counties, municipalities and other Government agencies directly or under lease.

Industrial sand sold or used by producers in the United States, 1945-49, by uses

Year	Glass sand		Molding sand		Grinding and polishing sand 1/	
	Short tons	Value	Short tons	Value	Short tons	Value
1945-	4,681,920	$8,374,218	7,190,856	$9,724,750	642,511	$1,029,501
1946-	4,848,602	9,541,405	6,973,906	9,531,263	906,889	1,379,954
1947-	5,321,247	11,395,245	8,308,434	11,944,228	1,099,253	1,801,989
1948-	4,542,260	10,770,845	8,265,451	12,892,392	1,119,802	2,151,095
1949-	4,339,033	10,772,151	6,113,520	10,140,458	1,080,886	2,063,866

Year	Fire or furnace sand		Engine sand		Filter sand		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1945-	308,997	$387,872	2,771,896	$1,924,725	109,845	$231,026	15,706,025	$21,672,092
1946-	248,866	333,643	2,797,132	1,924,779	157,511	284,991	15,932,906	22,996,035
1947-	373,917	426,956	2,683,333	2,092,656	211,646	366,905	17,997,830	28,027,979
1948-	322,576	492,128	2,445,454	2,439,135	158,269	382,600	16,853,812	29,128,195
1949-	318,373	429,512	1,883,580	1,830,549	189,243	376,596	13,924,635	25,613,132

1/ Includes blast sand as follows—1945: 318,390 tons valued at $766,013; 1946: 292,899 tons, $736,819; 1947: 308,128 tons, $958,023; 1948: 381,455 tons, $1,189,530; 1949: 393,427 tons, $1,222,513.

Sand and gravel sold or used by commercial and Government-and-contractor producers in the United States in 1949, by States

State	Short tons	Value	State	Short tons	Value
Alabama	3,296,582	$2,268,013	Nevada	1,346,608	$1,212,166
Alaska	(1/)	(1/)	New Hampshire	1/2,000,842	1/236,895
Arizona	1,511,953	970,813	New Jersey	1/5,555,121	1/6,981,862
Arkansas	1/2,507,244	1/2,128,474	New Mexico	683,223	610,839
California	36,279,816	30,198,924	New York	18,543,071	15,116,820
Colorado	4,751,431	2,964,588	North Carolina	5,092,929	3,553,180
Connecticut	2,648,343	1,587,446	North Dakota	4,370,521	1,638,293
Delaware	233,977	196,451	Ohio	14,955,657	14,428,820
Florida	2,243,898	1,879,733	Oklahoma	2,921,157	1,525,415
Georgia	1/984,488	1/757,680	Oregon	7,134,751	7,682,272
Idaho	3,271,362	2,286,609	Pennsylvania	11,698,939	14,398,577
Illinois	17,128,144	14,780,487	Puerto Rico	(1/)	(1/)
Indiana	8,887,231	6,695,426	Rhode Island	398,487	378,896
Iowa	7,978,229	4,446,661	South Carolina	1/287,108	1/145,142
Kansas	6,186,719	3,327,920	South Dakota	5,456,742	2,315,430
Kentucky	2,375,906	2,168,626	Tennessee	4,056,398	4,054,463
Louisiana	1/5,050,148	1/6,107,311	Texas	14,997,506	13,467,649
Maine	4,605,172	1,393,676	Utah	2,331,668	1,553,408
Maryland	1/4,776,815	1/6,028,791	Vermont	1,581,614	728,394
Massachusetts	5,504,841	4,379,030	Virginia	4,412,583	4,049,157
Michigan	20,475,996	13,992,903	Washington	9,215,914	6,391,412
Minnesota	12,935,392	4,903,908	West Virginia	1/3,284,805	1/5,491,274
Mississippi	1/1,942,941	1/1,330,413	Wisconsin	17,023,466	10,456,561
Missouri	5,193,672	4,346,681	Wyoming	2,352,493	1,912,838
Montana	6,682,144	3,365,472	Undistributed 1/	6,635,000	4,695,000
Nebraska	5,114,766	2,911,734			
			Total	319,104,000	248,443,000

1/ Output of commercial producers in Alaska and New Hampshire and of Government-and-contractor operations in Alaska, Arkansas, Georgia, Louisiana, Maryland, Mississippi, New Jersey, Puerto Rico, South Carolina, and West Virginia comprises "Undistributed."

Comparison of number and production of commercial sand and gravel plants in the United States, 1948-49, by size groups[1]

Size groups, in short tons	1948				1949			
	Plants[2]		Production		Plants[2]		Production	
	Number	Percent of total	Short tons	Percent of total	Number	Percent of total	Short tons	Percent of total
Less than 25,000	916	38.6	8,975,000	4.0	953	38.8	9,320,000	4.1
25,000 to less than 50,000	395	16.7	14,486,000	6.4	425	17.3	15,344,000	6.8
50,000 to less than 100,000	429	18.1	30,277,000	13.3	449	18.3	32,019,000	14.2
100,000 to less than 200,000	324	13.7	45,203,000	19.9	337	13.7	47,223,000	21.0
200,000 to less than 300,000	148	6.3	36,078,000	15.9	146	5.9	35,576,000	15.8
300,000 to less than 400,000	60	2.5	20,505,000	9.0	53	2.2	18,147,000	8.0
400,000 to less than 500,000	36	1.5	15,909,000	7.0	38	1.5	16,983,000	7.5
500,000 to less than 600,000	20	.8	10,871,000	4.8	16	.7	8,703,000	3.9
600,000 to less than 700,000	11	.5	7,076,000	3.1	6	.2	3,848,000	1.7
700,000 to less than 800,000	3	.1	2,202,000	1.0	11	.4	8,310,000	3.7
800,000 to less than 900,000	8	.3	6,782,000	3.0	7	.3	5,906,000	2.6
900,000 to less than 1,000,000	4	.2	3,826,000	1.7	3	.1	2,881,000	1.3
1,000,000 and over	17	.7	24,756,000	10.9	14	.6	21,204,000	9.4
Total	2,371	100.0	226,946,000	100.0	2,458	100.0	225,464,000	100.0

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[1] Excludes operations by or for States, counties, municipalities, and Federal Government agencies as follows--1948: 774 with an output of 85,763,000 tons of sand and gravel; 1949: 807 operations, 87,899,000 tons. Excludes operations by or for railroads as follows--1948: 147 with an output of 6,557,000 tons of sand and gravel; 1949: 128 operations, 5,741,000 tons.

[2] Includes a few companies operating more than 1 plant but not submitting separate returns for individual plants.

MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director 6649

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DISTRIBUTION

OF

OVEN AND BEEHIVE COKE

IN

1949

Prepared by Maxine M. Otero, J. A. DeCarlo, and J. A. Corgan, Chief, Anthracite and Coke Section, under the supervision of T. W. Hunter, Chief, Coal Branch, Fuels and Explosives Division.

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INTRODUCTION

This, the fourteenth annual report published by the Bureau of Mines, United States Department of the Interior, on the distribution of oven and beehive coke and breeze during the calendar year 1949, was made possible by the producers who voluntarily supplied data on the distribution of their product according to geographic areas and principal uses. The statistics herein pertain to oven and beehive coke and coke breeze only and do not include low- and medium-temperature, coal-gas retort, petroleum, or coal-tar-pitch cokes. Presentation of data is substantially the same as that published in previous distribution reports. The statistical tables show, by principal uses, oven and beehive coke and coke breeze consumed in each State; comparative consumption, by States, in nine geographic regions; and the origin and destination of shipments. These compilations are, therefore, indicative of the approximate size and nature of the coke market in a given State, as well as sources of supply. Data for a few States are combined in tables 3 and 4 as the Bureau is not at liberty to publish data on origin and destination of shipments where less than three producers are involved. All figures are in net tons of 2,000 pounds.

SUMMARY

The 15-percent reduction in coke output in 1949 from 1948 resulted in a corresponding decrease in the quantity of oven and beehive coke distributed. The movement of coke (63,462,233 tons) would have been higher had more been available, as there was a strong demand from industry. Initiation of a 3-day work week in the bituminous-coal industry in July and complete stoppages in both the bituminous-coal and steel industries for various periods during the latter part of the year were principal factors in reducing coke supply. Beehive-coke ovens were especially affected and the proportion of coke supplied by them to total output decreased from 9 percent in 1948 to 5 percent in 1949. The decline in production of oven and beehive coke reduced supplies in some areas during the latter part of the year and some industrial plants had to obtain part of their requirements from greater distances. Although 1949 figures on the average haul for all coke shipped by rail, the principal method of movement, are not available, it was no doubt considerably higher than the 182.44 miles reported for 1932 in Freight Traffic Report, Appendix #1, issued by the Federal Coordinator of Transportation. Although blast-furnace coke is not normally transported as far as foundry or other industrial coke, there were shipments from Texas to the Chicago area and from the Eastern Seaboard to the Pittsburgh-Youngstown district.

The outstanding feature in the coke trade since World War II is the upward trend in coke requirements for metallurgical purposes. Figure 1 shows this trend graphically and also illustrates the declining market for domestic coke. The tonnage of coke destined to iron blast furnaces in 1949 decreased 13 percent from the 1948 record but the proportion used increased from 80 percent of the total for all purposes in 1948 to 82 percent. Consumption of foundry coke in 1949 declined 26 percent from 1948 but was 67 percent higher than the 1935-39 average. A drop of 11 percent was registered in the use of coke for producer gas and water gas manufacture and the quantity involved represented 7 percent of total shipments. Growth in the use of coke for water gas manufacture since 1940 is significant, due in part to the increasing use of water gas as a fuel and also as a starting material for chemical synthesis. It is estimated that in 1949 more than 40 percent of the quantity of coke used to manufacture water gas was used for the latter purpose. The quantity of coke classified as other industrial (non-ferrous smelting, chemical processing, and miscellaneous other purposes) declined 36 percent from 1948 and was equivalent to 3 percent of the National total. Demand for coke for domestic heating has been steadily losing ground in the past decade dropping from 14 percent of total shipments in 1940 to but 4 percent in 1949. The tonnage shipped for household heating was the lowest since 1923.

CONSUMPTION BY STATES

As coke is the principal fuel used in smelting iron ore, States having the greatest concentration of blast furnaces are naturally leading coke-consuming States. Thus, Pennsylvania with a preponderance of blast-furnace capacity leads all States in coke consumption and in 1949 accounted for 25 percent of the National total. Ohio, second in coke consumption, used 16 percent followed by Indiana with 10 percent, New York and Illinois with 8 percent each, and Alabama with 7 percent of total consumption. Other States which consumed more than 2 million tons of coke in 1949 were Maryland, Michigan, and West Virginia which together consumed 12 percent of the total.

Blast-furnace coke was consumed in 18 States in 1949 and Pennsylvania alone accounted for 30 percent of the total used for that purpose. Blast furnaces in Ohio and Indiana together required about the same tonnage and Illinois, Alabama, and New York combined used 23 percent of the total. Thus, these six States consumed 82 percent of the total blast-furnace coke used in the United States. The use of foundry coke is widespread and all States received coke for this purpose. Michigan continued to lead all States in foundry-coke consumption with 19 percent of the total. Ohio, Pennsylvania, and Illinois followed and together accounted for 30 percent of the total foundry coke distributed. Of the 8 States using coke for the manufacture of producer gas, New York consumed 37 percent and Massachusetts and New Jersey together used 29 percent of the total. New York and West Virginia combined consumed 50 percent of all coke delivered to 27 States for the manufacture of water gas. It is to be noted that the manufacture of water gas in these two States is for two distinctly separate purposes. In New York, virtually all of the water gas is used as fuel, whereas in West Virginia, water gas is the starting point in the manufacture of chemicals. Significant tonnages of coke also were distributed for the manufacture of water gas in New Jersey, Virginia, and Ohio, the sum of which represented 29 percent of the total. Coke designated as other industrial was shipped to every State, except South Dakota, with New York, Michigan, Pennsylvania, and Ohio accounting for 45 percent of the total. Domestic coke (generally used for space heating) was shipped to all but 11 States and the District of Columbia with New York, Massachusetts, New Jersey, and Michigan consuming 54 percent of the total.

COMPARATIVE CONSUMPTION, 1940 AND 1949

Consumption of coke for all purposes in 1949 when compared with 1940 gained in 5 of the 9 geographic regions as shown in table 2. The over-all decline in New England, Michigan, Missouri Valley, and Lake Dock regions was due to the decline in the use of domestic coke which was not offset by gains in consumption for metallurgical purposes. The highly industrialized Middle Atlantic region consumed 41 percent of the coke distributed in 1949 largely because of the quantities of blast-furnace coke used in Pennsylvania, New York, and Maryland. This region leads in the consumption of coke classified as other industrial as well as that used for household heating. The latter use decreased 63 percent from 1940, principally because of the huge reduction in New York. Expansion of heavy industry in the Chicago area in the past decade enabled the Illinois-Indiana region to supplant Ohio as the second largest region in coke consumption. The largest percentage increase registered in the past 10 years was in the Southwest, Mountain, and Pacific region with a gain of 183 percent between 1940 and 1949. This was due almost entirely to the increase in blast-furnace coke consumption in Texas, Colorado, Utah, and California as uses for other purposes have not varied greatly. This region accounted for 4 percent of the large coke consumption in 1949 compared with 2 percent in 1940. The largest gain, tonnagewise, was registered by the Southeast region with an increase of more than 2 million tons (32 percent) over 1940.

SOURCES OF COKE CONSUMED IN EACH STATE

Table 3 shows the extent and nature of the coke market in a given State and the sources of supply. Ohio was the leading consumer of out-of-State coke receiving more than 2 million tons (20 percent) of its requirements from 15 other States; Pennsylvania supplied 54 percent of the quantity shipped into Ohio, a large part of which was beehive blast-furnace coke from the Connellsville region. West Virginia is also a large supplier of coke to Ohio because of the location of the blast furnaces of one large steel producer who makes coke in West Virginia and sends it across the river to their blast furnaces in Ohio. This same coke plant-blast furnace relationship exists in the Chicago area where coke is made in Indiana and crosses the State line into Illinois, accounting for the large tonnage of coke consumed in Illinois and originating in Indiana. Iron foundries and other industrial plants that require coke in their operation are widely scattered in many States that do not produce coke and in many cases, long hauls are necessary to meet the needs of these industrials.

Shipments of coke across State borders, in the aggregate, represent considerable tonnage; but most of the coke-producing States use from 80 to 90 percent of the large coke produced within their boundaries. Pennsylvania continued to lead in interstate shipments sending nearly 2 million tons (11 percent) of the total coke distributed to 22 States, the District of Columbia, and 4 foreign countries. Indiana and Kentucky together also shipped nearly 2 million tons to 27 States and Canada, or 23 percent of the movement from coke plants in these two States. Ohio ranked third sending almost 3/4 million tons to 15 States and Canada. Shipments from Alabama were the most widespread moving to 32 States and 7 foreign countries. However, the tonnage was relatively small and represented less than 10 percent of the total originating in this State. Missouri, while ranking far down the list in coke production, shipped the largest proportion of any State with 54 percent of its output distributed to 20 other States and Canada.

SCREENINGS OR BREEZE

The term "breeze" is used in the coke industry to designate the finer pieces of coke resulting from the screening of major sizes. Although breeze generally runs higher in ash, sulfur, and moisture content than large coke, it makes good boiler fuel. Reports from coke-oven operators in 1949 indicated that 67 percent of the total breeze distributed was used for raising steam, 2 percent for making producer gas and water gas, and 31 percent for other industrial purposes, including the sintering of iron ore. Breeze has a lower value per ton than large coke and its movement is restricted as 79 percent of the total distributed was used by the producers themselves and only 10 percent was shipped outside producing States.

EXPORTS OF COKE AND BREEZE

Coke producers reported that 494,602 tons of coke and breeze were exported in 1949. This figure, as in previous surveys, is slightly lower than the foreign shipments (548,256 tons) reported to the United States Department of Commerce by producers and wholesalers. Canada is the principal market for American coke and always receives from 75 to 90 percent of total exports. The demand for metallurgical coke in the United States since World War II made it necessary to place governmental limitations on exports. Exports of metallurgical coke in 1949 were restricted to Western Hemisphere countries and, with the exception of Canada, were limited to quotas. Producers reports indicated that 45 percent of the total exports was metallurgical coke most of which was shipped to Canada.

OVEN AND BEEHIVE COKE AND BREEZE EXPORTED BY PRODUCERS, 1940 AND 1947-49, BY USE AND DESTINATION, IN NET TONS

	1940	1947	1948	1949
USE				
Furnace	81,627	9,082	39,436	98,938
Foundry	98,337	167,367	155,922	125,562
Other industrial	190,317	165,446	207,178	137,945
Domestic	303,796	231,316	123,075	90,020
Breeze	46,498	32,421	26,732	42,137
Total	720,575	605,632	552,343	494,602
DESTINATION				
North America:				
Canada	640,888	487,085	491,756	384,886
Mexico	16,908	19,664	22,962	88,907
West Indies	24,299	14,362	7,590	12,254
Other North America	48	....	....	....
Central America	229	....	....	34
South America	6,173	14,563	14,742	3,743
Europe	14,350	54,936	....	....
Hawaii and the Philippines	3,132	....	....	....
Unknown	14,548	15,022	15,293	4,778
Total	720,575	605,632	552,343	494,602

FIG. 1-PERCENTAGE DISTRIBUTION OF OVEN AND BEEHIVE COKE BY PRINCIPAL USES 1936-49 (EXCLUSIVE OF BREEZE)

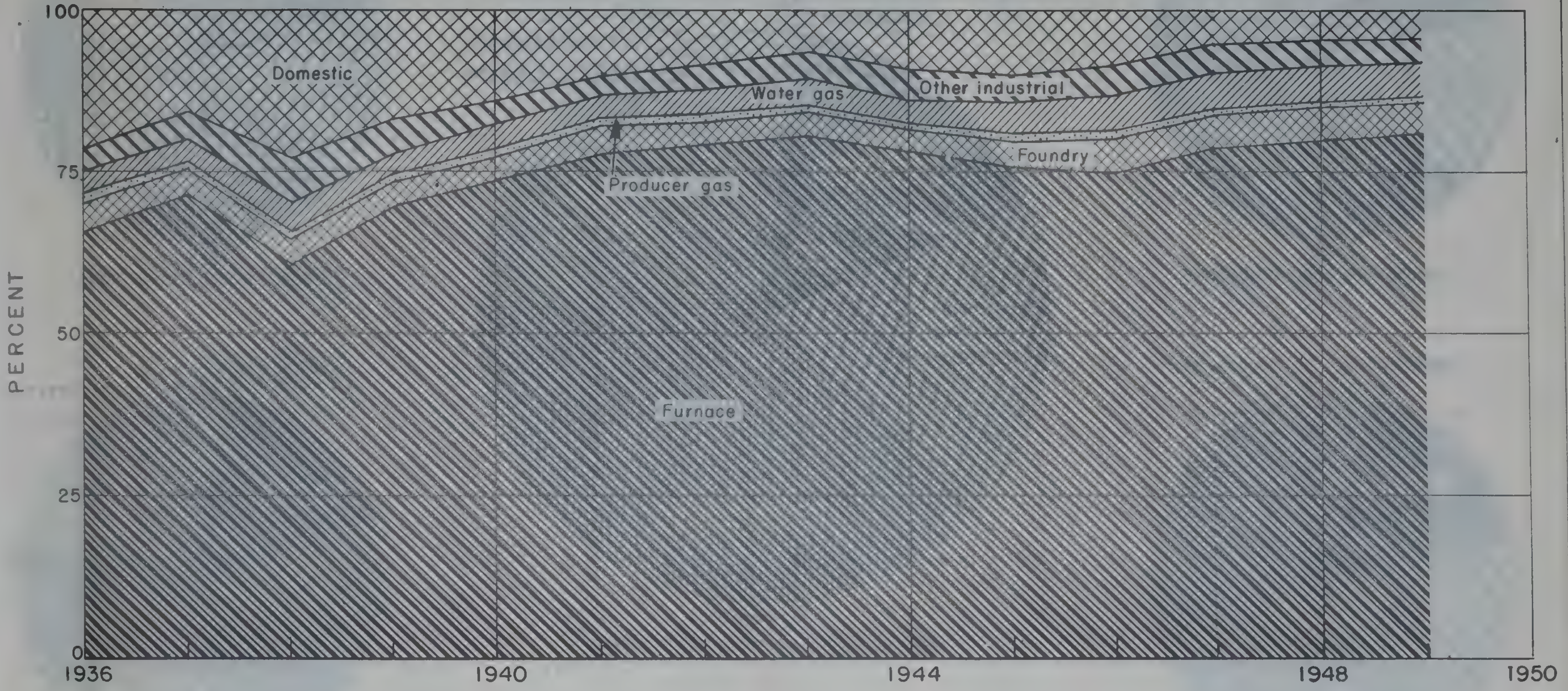
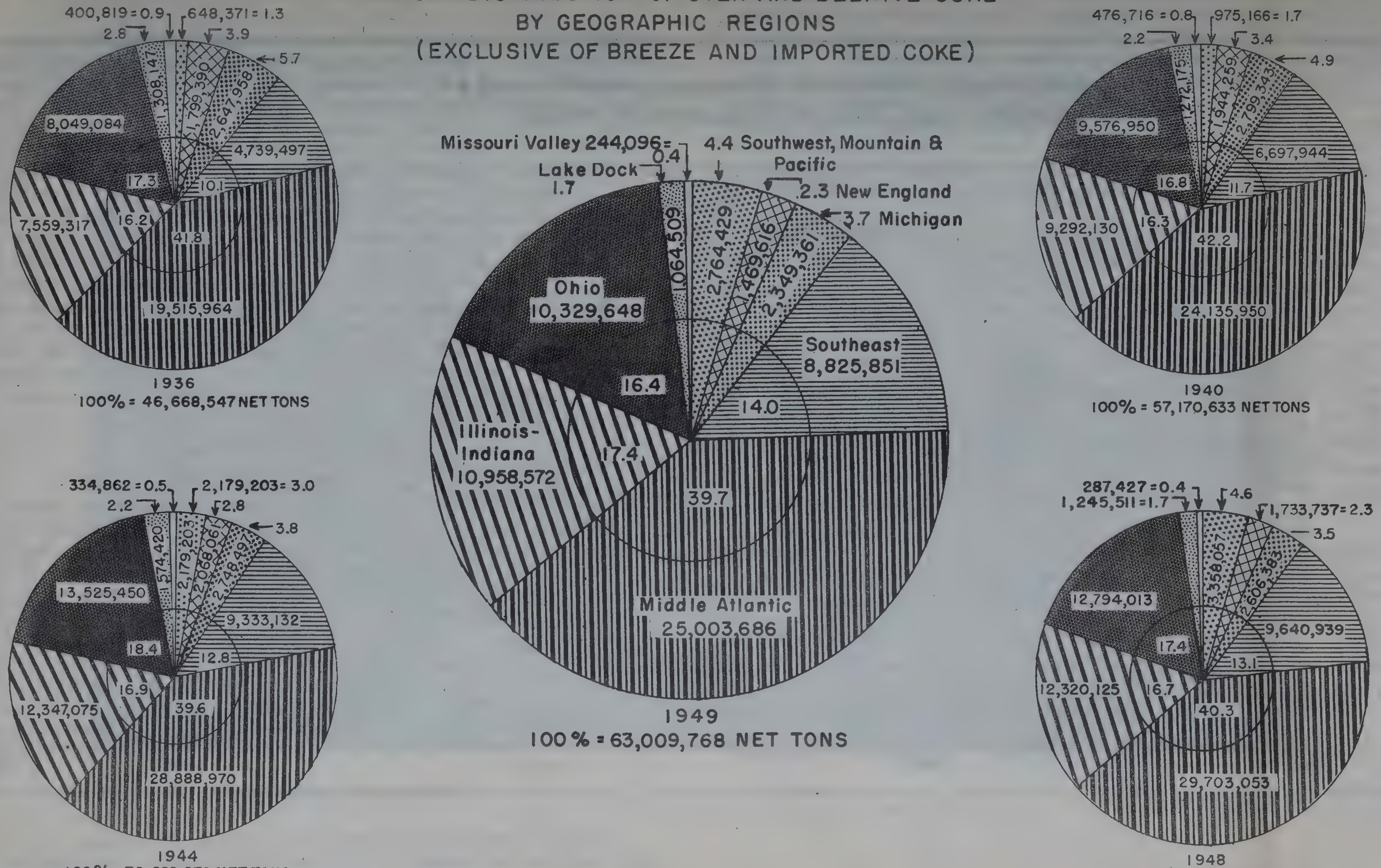


FIG. 2-DISTRIBUTION OF OVEN AND BEEHIVE COKE BY GEOGRAPHIC REGIONS (EXCLUSIVE OF BREEZE AND IMPORTED COKE)



1936
100% = 46,668,547 NET TONS

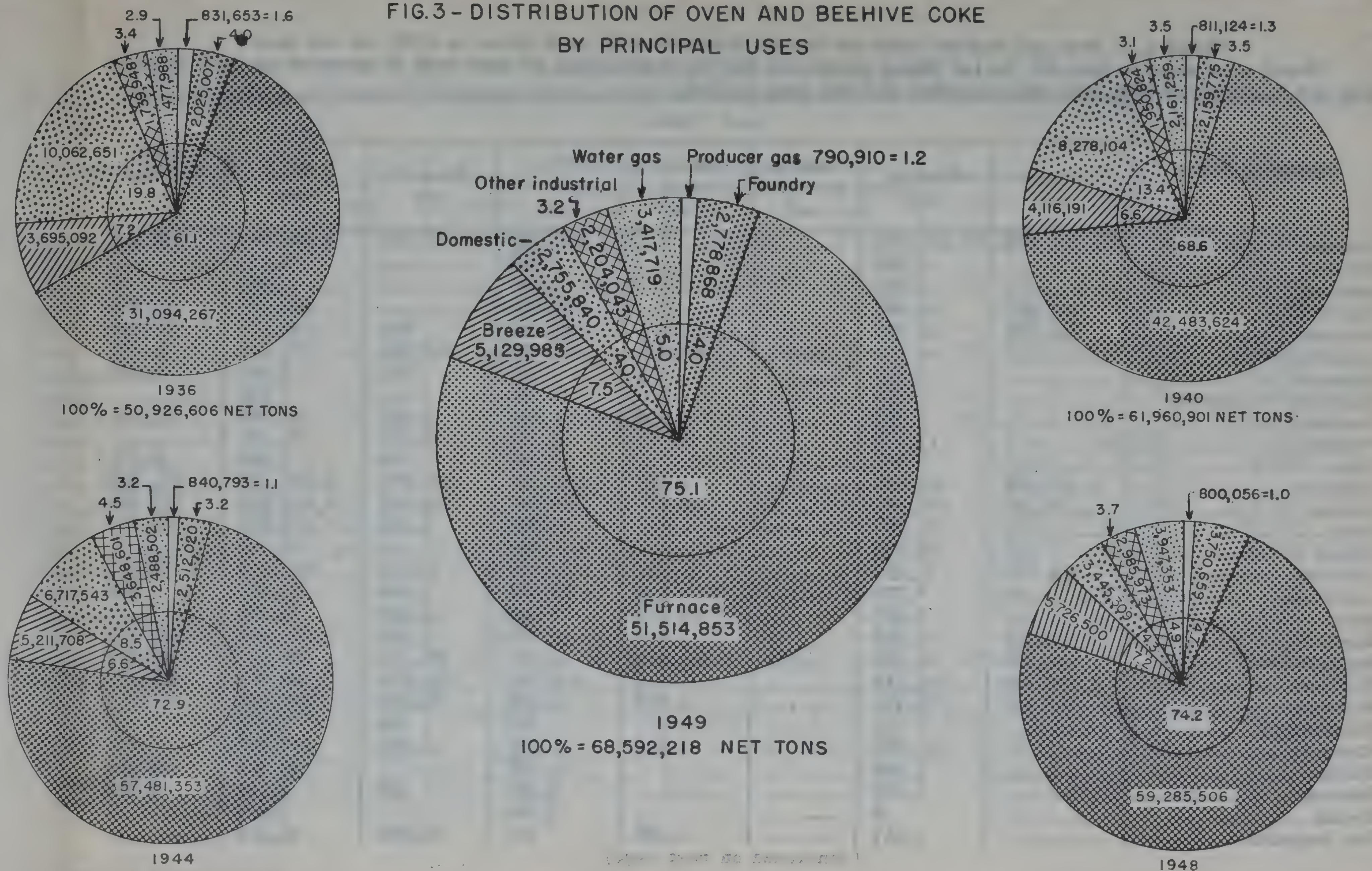
1940
100% = 57,170,633 NET TONS

1949
100% = 63,009,768 NET TONS

1944
100% = 72,999,670 NET TONS

1948
100% = 73,689,245 NET TONS

FIG. 3 - DISTRIBUTION OF OVEN AND BEEHIVE COKE BY PRINCIPAL USES



1936
100% = 50,926,606 NET TONS

1940
100% = 61,960,901 NET TONS

1949
100% = 68,592,218 NET TONS

1944
100% = 78,900,520 NET TONS

1948
100% = 79,941,356 NET TONS

TABLE 1. - Oven and beehive coke and breeze distributed to each State in 1949, in net tons

(Based upon reports from all United States producers showing destination of coke used by producer or sold in 1949. Does not include imported coke which totaled 277,507 tons in 1949)

Consuming State	Coke							Total breeze
	Furnace use	Foundry use	Making producer gas	Making water gas	Other industrial use	Domestic use	Total coke	
Alabama	4,309,125	186,594	....	....	147,970	37,003	4,680,692	193,547
Arizona	....	5,407	....	....	568	....	5,975	....
Arkansas	....	2,201	....	....	1,188	....	3,389	95
California	387,911	55,049	....	....	38,610	....	481,570	35,565
Colorado	698,195	12,692	....	....	19,004	428	730,319	71,339
Connecticut	....	42,056	74,318	118,904	11,370	102,529	349,177	39,846
Delaware	....	2,211	....	96	213	481	3,001	5,275
District of Columbia	....	129	....	....	30	....	159	....
Florida	....	1,506	....	35,009	1,692	1,277	39,484	13,439
Georgia	....	13,635	....	6,519	5,783	14,384	40,321	....
Idaho	....	369	....	....	2,875	48	3,292	8,721
Illinois	4,365,368	243,649	....	2,492	128,225	184,843	4,924,577	281,209
Indiana	5,575,986	144,554	15,106	40,673	118,853	138,823	6,033,995	550,976
Iowa	....	77,709	....	....	29,562	3,308	110,579	10,851
Kansas	....	11,680	....	....	2,492	....	14,172	....
Kentucky	501,400	31,281	....	91,228	33,364	30,002	687,275	76,956
Louisiana	....	4,778	....	1,695	45,686	1,486	53,645	542
Maine	....	5,297	....	11,260	420	16,222	33,199	....
Maryland	2,536,610	33,377	....	8,006	39,744	1,353	2,619,090	229,805
Massachusetts	147,420	55,116	116,816	204,819	12,017	384,543	920,731	89,014
Michigan	1,359,709	498,115	....	....	238,463	253,074	2,349,361	222,752
Minnesota	465,338	33,781	....	8,834	23,986	99,987	631,926	83,769
Mississippi	....	771	....	....	222	349	1,342	56
Missouri	....	61,869	....	5,447	31,911	13,997	113,224	5,483
Montana	....	1,984	....	....	11,727	....	13,711	28,611
Nebraska	....	3,441	....	....	2,414	266	6,121	5,282
Nevada	....	26	....	....	3,889	....	3,915	....
New Hampshire	....	3,917	....	1,294	402	19,902	25,515	....

(Continued on next page)

TABLE 1. - Oven and beehive coke and breeze distributed to each State in 1949, in net tons (Continued)

Consuming State	Coke							Total breeze
	Furnace use	Foundry use	Making producer gas	Making water gas	Other industrial use	Domestic use	Total coke	
New Jersey	....	88,238	112,661	357,955	92,874	280,906	932,634	107,279
New Mexico	....	438	....	....	898	....	1,336	....
New York	3,075,640	113,751	293,142	984,862	344,450	509,911	5,321,756	475,198
North Carolina	....	12,879	....	1,859	3,275	4,558	22,571	168
North Dakota	....	324	....	....	193	352	869	....
Ohio	9,428,975	304,792	....	299,513	164,743	131,625	10,329,648	735,801
Oklahoma	....	4,145	....	....	162	....	4,307	40,887
Oregon	....	4,262	....	....	6,820	....	11,082	2,271
Pennsylvania	15,307,215	254,399	87,196	118,785	191,684	167,767	16,127,046	1,252,139
Rhode Island	....	11,671	37,067	16,410	1,062	59,756	125,966	21,712
South Carolina	....	4,496	....	1,493	5,159	2,434	13,582	2,546
South Dakota	....	363	....	....	....	556	919	....
Tennessee	107,423	58,043	....	42	103,540	6,516	275,564	110,540
Texas	441,585	31,410	....	136	13,361	912	487,404	34,915
Utah	885,911	11,208	....	....	48,363	4,920	950,402	84,991
Vermont	....	2,706	....	2,455	971	8,896	15,028	....
Virginia	127,900	41,863	....	317,293	67,335	1,461	555,852	91
Washington	....	7,246	....	....	5,538	....	12,784	9,095
West Virginia	1,694,204	24,128	....	740,536	50,199	101	2,509,168	193,323
Wisconsin	....	143,664	54,604	29,456	22,227	180,844	430,795	63,759
Wyoming	....	86	....	....	1,212	....	1,298	....
Total	51,415,915	2,653,306	790,910	3,407,071	2,076,746	2,665,820	63,009,768	5,087,848
Exported	98,938	125,562	....	10,648	127,297	90,020	452,465	42,137
Grand total	51,514,853	2,778,868	790,910	3,417,719	2,204,043	2,755,840	63,462,233	5,129,985

TABLE 2. - Comparative tonnage of oven and beehive coke consumed in each State, by regions, 1940 and 1949, in net tons
(Exclusive of imported coke and of screenings or breeze)

Consuming region and State	Furnace use		Foundry use		Other industrial use		Domestic use		Total		
	1940	1949	1940	1949	1940	1949	1940	1949	1940	1949	Increase or decrease
New England:											
Maine	....	....	2,956	5,297	2,181	11,680	49,473	16,222	54,610	33,199	-21,411
New Hampshire	....	....	1,443	3,917	1,616	1,696	55,709	19,902	58,768	25,515	-33,253
Vermont	....	....	5,433	2,706	3,291	3,426	32,587	8,896	41,311	15,028	-26,283
Massachusetts	88,830	147,420	48,872	55,116	162,598	333,652	933,356	384,543	1,233,656	920,731	-312,925
Connecticut	....	....	34,847	42,056	128,140	204,592	203,534	102,529	366,521	349,177	-17,344
Rhode Island	....	....	10,199	11,671	24,424	54,539	154,770	59,756	189,393	125,966	-63,427
Total	88,830	147,420	103,750	120,763	322,250	609,585	1,429,429	591,848	1,944,259	1,469,616	-474,643
Middle Atlantic:											
New York	2,615,108	3,075,640	141,372	113,751	1,383,937	1,622,454	1,563,584	509,911	5,704,001	5,321,756	-382,245
New Jersey	....	....	86,161	88,238	433,524	563,490	488,890	280,906	1,008,575	932,634	-75,941
Pennsylvania	14,319,836	15,307,215	219,232	254,399	313,431	397,665	537,204	167,767	15,389,703	16,127,046	+737,343
Delaware	....	....	2,758	2,211	1,962	309	2,326	481	7,046	3,001	-4,045
Maryland	1,849,917	2,536,610	23,891	33,377	57,437	47,750	28,050	1,353	1,959,295	2,619,090	+659,795
District of Columbia ..	....	....	395	129	64,505	30	2,430	....	67,330	159	-67,171
Total	18,784,861	20,919,465	473,809	492,105	2,254,796	2,631,698	2,622,484	960,418	24,135,950	25,003,686	+867,736
Ohio	8,619,762	9,428,975	304,373	304,792	192,476	464,256	460,339	131,625	9,576,950	10,329,648	+752,698
Michigan	1,076,370	1,359,709	333,791	498,115	253,488	238,463	1,135,694	253,074	2,799,343	2,349,361	-449,982
Illinois-Indiana:											
Illinois	3,332,028	4,365,368	172,455	243,649	174,023	130,717	683,630	184,843	4,362,136	4,924,577	+562,441
Indiana	4,305,518	5,575,986	106,063	144,554	137,587	174,632	380,826	138,823	4,929,994	6,033,995	+1,104,001
Total	7,637,546	9,941,354	278,518	388,203	311,610	305,349	1,064,456	323,666	9,292,130	10,958,572	+1,666,442
Missouri Valley:											
Missouri	....	....	34,426	61,869	63,769	37,358	269,036	13,997	367,231	113,224	-254,007
Iowa	....	....	33,721	77,709	31,186	29,562	10,915	3,308	75,822	110,579	+34,757
Nebraska	....	....	2,320	3,441	20,177	2,414	819	266	23,316	6,121	-17,195
Kansas	....	....	7,510	11,680	2,787	2,492	50	....	10,347	14,172	+3,825
Total	....	....	77,977	154,699	117,919	71,826	280,820	17,571	476,716	244,096	-232,620

(Continued on next page)

TABLE 2. - Comparative tonnage of oven and beehive coke consumed in each State, by regions, 1940 and 1949, in net tons (Continued)

Consuming region and State	Furnace use		Foundry use		Other industrial use		Domestic use		Total		
	1940	1949	1940	1949	1940	1949	1940	1949	1940	1949	Increase or decrease
Lake Dock:											
Wisconsin	....	....	99,327	143,664	120,925	106,287	432,778	180,844	653,030	430,795	-222,235
Minnesota	225,569	465,338	15,684	33,781	42,003	32,820	331,682	99,987	614,938	631,926	+16,988
North Dakota	....	....	....	324	267	193	1,491	352	1,758	869	-889
South Dakota	....	....	181	363	501	....	1,767	556	2,449	919	-1,530
Total	225,569	465,338	115,192	178,132	163,696	139,300	767,718	281,739	1,272,175	1,064,509	-207,666
Southeast:											
Virginia	52,715	127,900	31,258	41,863	374,841	384,628	8,957	1,461	467,771	555,852	+88,081
West Virginia	787,694	1,694,204	12,657	24,128	474,713	790,735	4,369	101	1,279,433	2,509,168	+1,229,735
North Carolina	....	....	13,410	12,879	6,353	5,134	4,169	4,558	23,932	22,571	-1,361
South Carolina	....	....	3,613	4,496	2,736	6,652	3,160	2,434	9,509	13,582	+4,073
Georgia	....	....	13,765	13,635	10,957	12,302	15,478	14,384	40,200	40,321	+121
Florida	....	....	1,017	1,506	30,290	36,701	4,961	1,277	36,268	39,484	+3,216
Kentucky	221,698	501,400	20,341	31,281	12,532	124,592	41,993	30,002	296,564	687,275	+390,711
Tennessee	54,312	107,423	59,724	58,043	44,455	103,582	18,658	6,516	177,149	275,564	+98,415
Alabama	4,099,434	4,309,125	123,394	186,594	42,982	147,970	99,102	37,003	4,364,912	4,680,692	+315,780
Mississippi	....	....	821	771	....	222	1,385	349	2,206	1,342	-864
Total	5,215,853	6,740,052	280,000	375,196	999,859	1,612,518	202,232	98,085	6,697,944	8,825,851	+2,127,907
Southwest, Mountain, and Pacific:											
Louisiana	....	....	2,883	4,778	21,656	47,381	7,374	1,486	31,913	53,645	+21,732
Arkansas	....	....	1,444	2,201	567	1,188	38	....	2,049	3,389	+1,340
Oklahoma	....	....	2,205	4,145	172	162	19	....	2,396	4,307	+1,911
Texas	....	441,585	15,991	31,410	31,409	13,497	225	912	47,625	487,404	+439,779
New Mexico	....	....	1,018	438	219	898	....	....	1,237	1,336	+99
Arizona	....	....	4,053	5,407	140	568	155	....	4,348	5,975	+1,627
Colorado	521,698	698,195	11,604	12,692	12,391	19,004	201	428	545,894	730,319	+184,425
Utah	163,790	885,911	10,337	11,208	55,234	48,363	2,113	4,920	231,474	950,402	+718,928
Nevada	....	....	28	26	29	3,889	....	....	57	3,915	+3,858
Wyoming	....	....	....	86	2,470	1,212	2	....	2,472	1,298	-1,174
Montana	....	....	2,060	1,984	22,733	11,727	....	....	24,793	13,711	-11,082
Idaho	....	....	69	369	3,831	2,875	....	48	3,900	3,292	-608
Washington	....	....	3,089	7,246	1,609	5,538	21	....	4,719	12,784	+8,065
Oregon	....	....	2,821	4,262	1,788	6,820	....	....	4,609	11,082	+6,473
California	....	387,911	36,426	55,049	30,266	38,610	988	....	67,680	481,570	+413,890
	685,488	2,413,602	94,028	141,301	184,514	201,732	11,136	7,794	975,166	2,764,429	+1,789,263
	42,334,279	51,415,915	2,061,438	2,653,506	4,800,608	6,274,727	7,974,508	2,665,820	57,170,633	63,009,768	+5,839,135

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
NEW ENGLAND REGION												
MAINE:												
From New England	...	...	5,297	...	11,448	...	16,222	...	32,967	...	32,967	...
Pennsylvania	...	...	...	...	132	...	...	...	132	...	132	...
West Virginia	...	...	...	...	100	...	...	...	100	...	100	...
	...	...	5,297	...	11,680	...	16,222	...	33,199	...	33,199	...
NEW HAMPSHIRE:												
From New England	...	...	3,917	...	1,430	...	17,067	...	22,414	...	22,414	...
N. J. and N. Y.	...	...	...	...	...	...	2,678	...	2,678	...	2,678	...
Pennsylvania	...	...	...	...	...	266	...	157	...	423	423	...
	...	...	3,917	...	1,430	266	19,745	157	25,092	423	25,515	...
VERMONT:												
From New England	...	...	2,706	...	126	...	2,042	...	4,874	...	4,874	...
N. J. and N. Y.	...	...	...	...	3,143	...	6,854	...	9,997	...	9,997	...
Pennsylvania	...	...	...	...	36	121	...	...	36	121	157	...
	...	...	2,706	...	3,305	121	8,896	...	14,907	121	15,028	...
MASSACHUSETTS:												
From New England	147,362	...	55,116	...	322,347	...	365,675	...	890,500	...	890,500	88,683
N. J. and N. Y.	...	...	...	...	11,120	...	14,083	...	25,203	...	25,203	...
Pennsylvania	...	58	...	...	...	185	4,636	149	4,636	392	5,028	331
	147,362	58	55,116	...	333,467	185	384,394	149	920,339	392	920,731	89,014
CONNECTICUT:												
From New England	...	...	40,261	...	202,145	...	102,408	...	344,814	...	344,814	39,846
N. J. and N. Y.	...	...	1,476	...	2,447	...	121	...	4,044	...	4,044	...
Pennsylvania	...	...	275	44	...	...	...	...	275	44	319	...
	...	...	42,012	44	204,592	...	102,529	...	349,133	44	349,177	39,846
RHODE ISLAND:												
From Mich. and Wis.	...	...	921	...	...	...	...	...	921	...	921	...
New England	...	...	10,673	...	54,539	...	59,756	...	124,968	...	124,968	21,712
N. J. and N. Y.	...	...	77	...	...	...	...	...	77	...	77	...
	...	...	11,671	...	54,539	...	59,756	...	125,966	...	125,966	21,712

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
MIDDLE ATLANTIC REGION												
NEW YORK:												
From Alabama	....	....	2,548	......	....	......	....	.....	2,548	....	2,548	....
Colorado	....	....	164	......	54	......	....	.....	218	....	218	....
Illinois	....	....	414	......	....	......	....	.....	414	....	414	....
Ind. and Ky.	....	2,791	721	......	34	......	....	.....	755	2,791	3,546	....
Mich. and Wis.	2,663	....	23,721	......	57,715	......	328	.....	84,427	....	84,427	6,582
New England	....	....	18,404	......	78	......	39	.....	18,521	....	18,521	....
N. J. and N. Y.	3,047,170	....	23,900	......	1,544,694	......	491,911	.....	5,107,675	....	5,107,675	457,306
Ohio	....	....	18,968	......	834	......	....	.....	19,802	....	19,802	5,258
Pennsylvania	12,858	9,704	18,585	6,277	4,998	13,159	15,442	2,191	51,883	31,331	83,214	3,371
West Virginia	....	454	......	49	....	888	....	.....	....	1,391	1,391	2,681
	3,062,691	12,949	107,425	6,326	1,608,407	14,047	507,720	2,191	5,286,243	35,513	5,321,756	475,198
NEW JERSEY:												
From Maryland	....	....	....	......	....	......	....	.....	....	....	....	16,919
Mich. and Wis.	....	....	....	......	....	......	....	.....	....	....	....	100
Minnesota	....	....	638	......	....	......	....	.....	638	....	638	....
N. J. and N. Y.	....	....	38,066	......	537,525	......	264,833	.....	840,424	....	840,424	82,712
Ohio	....	....	648	......	....	......	....	.....	648	....	648	....
Pennsylvania	....	....	44,649	2,013	22,784	1,598	15,617	54	83,050	3,665	86,715	7,548
West Virginia	....	....	1,300	924	150	1,433	292	110	1,742	2,467	4,209	....
	....	....	85,301	2,937	560,459	3,031	280,742	164	926,502	6,132	932,634	107,279
PENNSYLVANIA:												
From Alabama	....	....	166	......	....	......	....	.....	166	....	166	....
Colorado	....	....	....	......	1,940	......	....	.....	1,940	....	1,940	....
Illinois	....	....	2,338	......	....	......	....	.....	2,338	....	2,338	....
Ind. and Ky.	3,973	641	2,126	......	....	......	....	.....	6,099	641	6,740	....
Maryland	....	....	....	......	....	......	....	.....	....	....	....	41
Mich. and Wis.	....	....	913	......	....	......	....	.....	913	....	913	387
Minnesota	....	....	2,263	......	....	......	....	.....	2,263	....	2,263	....
Missouri	....	....	128	......	....	......	....	.....	128	....	128	....
New England	....	....	1,502	......	....	......	....	.....	1,502	....	1,502	....
N. J. and N. Y.	162,598	....	1,717	......	10,628	......	289	.....	175,232	....	175,232	....
Ohio	37,533	....	20,269	......	624	......	396	.....	58,822	....	58,822	5,878
Pennsylvania	13,393,966	1,534,803	116,546	93,547	312,019	43,018	135,032	2,350	13,957,563	1,673,718	15,631,281	1,235,038
Tennessee	....	....	76	......	....	......	....	.....	76	....	76	....
Texas	....	....	1,177	......	....	......	....	.....	1,177	....	1,177	....
Utah	....	....	....	......	....	......	....	.....	....	....	....	39
West Virginia	173,179	522	7,166	4,465	26,688	2,748	29,700	.....	236,733	7,735	244,468	10,756
	13,771,249	1,535,966	156,387	98,012	351,899	45,766	165,417	2,350	14,444,952	1,682,094	16,127,046	1,252,139

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
MIDDLE ATLANTIC REGION (Continued)												
DELAWARE:												
From Pennsylvania	....	....	2,165	46	118	191	481	.....	2,764	237	3,001	5,275
MARYLAND:												
From Alabama	....	....	180	......	....	......	....	.....	180	....	180	....
Maryland	2,049,692	....	856	......	3,883	......	....	.....	2,054,431	....	2,054,431	226,333
Minnesota	....	....	664	......	....	......	....	.....	664	....	664	....
N. J. and N. Y. ..	1,299	....	....	......	4,975	......	....	.....	6,274	....	6,274	....
Pennsylvania	310,105	157,933	14,194	16,148	668	29,376	1,170	92	326,137	203,549	529,686	3,472
Texas	....	....	97	....	....	......	....	.....	97	....	97	....
West Virginia	....	17,581	120	1,118	....	8,848	91	.....	211	27,547	27,758	....
	2,361,096	175,514	16,111	17,266	9,526	38,224	1,261	92	2,387,994	231,096	2,619,090	229,805
DISTRICT OF COLUMBIA:												
From Pennsylvania	....	....	129	......	30	......	....	.....	159	....	159	....
OHIO REGION												
OHIO:												
From Alabama	....	....	16,733	......	....	......	....	.....	16,733	....	16,733	....
Illinois	717	....	2,768	......	1,752	......	....	.....	5,237	....	5,237	43
Ind. and Ky.	22,578	1,060	24,092	......	1,969	31	32	.....	48,671	1,091	49,762	279
Mich. and Wis. ...	9,990	....	76,243	......	174	......	....	.....	86,407	....	86,407	207
Minnesota	....	....	1,089	......	....	......	....	.....	1,089	....	1,089	....
Missouri	....	....	431	......	....	......	....	.....	431	....	431	21
New England	....	....	338	......	....	......	....	.....	338	....	338	....
N. J. and N. Y. ..	78,348	....	....	......	24,514	......	....	.....	102,862	....	102,862	....
Ohio	7,634,744	....	130,195	......	403,862	......	100,077	.....	8,268,878	....	8,268,878	724,264
Pennsylvania	262,045	761,843	7,372	21,525	12,555	15,234	16,410	6,523	298,382	805,125	1,103,507	5,159
Tennessee	....	....	20,795	......	....	......	....	.....	20,795	....	20,795	....
Texas	3,608	....	321	......	....	......	....	.....	3,929	....	3,929	....
West Virginia	616,412	37,630	923	1,967	3,655	510	8,583	.....	629,573	40,107	669,680	5,828
	8,628,442	800,533	281,300	23,492	448,481	15,775	125,102	6,523	9,483,325	846,323	10,329,648	735,801

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
MICHIGAN REGION												
MICHIGAN:												
From Alabama	....	....	46,470	......	....	......	....	.....	46,470	....	46,470	....
Illinois	....	....	79,905	......	522	......	....	.....	80,427	....	80,427	39
Ind. and Ky.	....	....	60,634	......	9,920	......	3,514	.....	74,068	....	74,068	....
Mich. and Wis. ...	1,359,669	....	249,498	......	162,015	......	228,342	.....	1,999,524	....	1,999,524	221,121
Minnesota	....	....	50,638	......	38	......	....	.....	50,676	....	50,676	....
N. J. and N. Y. ..	....	....	....	......	56,592	......	4,172	.....	60,764	....	60,764	....
Ohio	....	....	8,289	......	5,620	......	1,652	.....	15,561	....	15,561	....
Pennsylvania	....	....	497	37	1,706	2,050	1,309	1,902	3,512	3,989	7,501	288
Texas	....	....	28	......	....	......	....	.....	28	....	28	....
Virginia	....	....	....	701	....	......	....	.....	....	701	701	....
West Virginia	....	40	....	1,418	....	......	12,183	.....	12,183	1,458	13,641	1,304
	1,359,669	40	495,959	2,156	236,413	2,050	251,172	1,902	2,343,213	6,148	2,349,361	222,752
ILLINOIS-INDIANA REGION												
ILLINOIS:												
From Alabama	....	....	11,928	......	22,757	......	22,297	.....	56,982	....	56,982	....
Colorado	....	....	....	......	5,568	......	....	.....	5,568	....	5,568	....
Illinois	2,737,580	....	83,358	......	54,886	......	101,935	.....	2,977,759	....	2,977,759	220,948
Ind. and Ky.	1,413,180	17,256	91,546	......	20,943	......	17,040	.....	1,542,709	17,256	1,559,965	41,180
Mich. and Wis. ...	76,062	....	20,587	......	16,718	......	34,276	.....	147,643	....	147,643	13,101
Minnesota	....	....	4,265	......	....	......	....	.....	4,265	....	4,265	....
Missouri	15,992	....	31,200	......	3,428	......	186	.....	50,806	....	50,806	3,809
N. J. and N. Y. ..	141	....	....	......	....	......	....	.....	141	....	141	....
Ohio	47,922	....	30	......	3,570	......	2,361	.....	53,883	....	53,883	1,905
Pennsylvania	4,842	32,277	....	101	1,892	55	1,315	391	8,049	32,824	40,873	....
Texas	20,116	....	....	......	....	......	....	.....	20,116	....	20,116	....
West Virginia	....	....	....	634	900	......	5,042	.....	5,942	634	6,576	266
	4,315,835	49,533	242,914	735	130,662	55	184,452	391	4,873,863	50,714	4,924,577	281,209

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
ILLINOIS-INDIANA REGION (Continued)												
INDIANA:												
From Alabama	....	....	997	......	492	......	42	.....	1,531	....	1,531	....
Illinois	43,063	....	17,663	......	13,718	......	550	.....	74,994	....	74,994	26,338
Ind. and Ky.	5,480,521	....	100,105	......	148,930	......	121,796	.....	5,851,352	....	5,851,352	512,877
Mich. and Wis. ...	47,999	....	17,675	......	5,259	......	1,724	.....	72,657	....	72,657	9,919
Minnesota	276	....	521	......	390	......	....	.....	1,187	....	1,187	....
Ohio	....	....	7,073	......	3,153	......	11,269	.....	21,495	....	21,495	1,842
Pennsylvania	....	4,127	....	429	2,311	316	392	24	2,703	4,896	7,599	....
Tennessee	....	....	....	......	63	......	....	.....	63	....	63	....
West Virginia	....	....	....	91	....	......	3,026	.....	3,026	91	3,117	....
	5,571,859	4,127	144,034	520	174,316	316	138,799	24	6,029,008	4,987	6,033,995	550,976
MISSOURI VALLEY REGION												
MISSOURI:												
From Alabama	....	....	482	......	214	......	276	.....	972	....	972	....
Colorado	....	....	....	......	200	......	....	.....	200	....	200	....
Illinois	....	....	881	......	462	......	35	.....	1,378	....	1,378	41
Ind. and Ky.	....	....	5,142	......	657	......	82	.....	5,881	....	5,881	....
Mich. and Wis. ...	....	....	1,743	......	....	......	....	.....	1,743	....	1,743	....
Minnesota	....	....	26	......	....	......	....	.....	26	....	26	....
Missouri	....	....	53,538	......	35,825	......	13,538	.....	102,901	....	102,901	5,442
Pennsylvania	....	....	....	57	....	......	....	.....	....	57	57	....
Virginia	....	....	....	......	....	......	....	66	....	66	66	....
	....	....	61,812	57	37,358	......	13,931	66	113,101	123	113,224	5,483
IOWA:												
From Alabama	....	....	....	......	....	......	99	.....	99	....	99	....
Colorado	....	....	27	......	....	......	....	.....	27	....	27	....
Illinois	....	....	19,735	......	12,731	......	141	.....	32,607	....	32,607	2,726
Ind. and Ky.	....	....	33,280	......	5,153	......	1,830	.....	40,263	....	40,263	7,547
Mich. and Wis. ...	....	....	9,231	......	....	......	713	.....	9,944	....	9,944	....
Minnesota	....	....	7,381	......	....	......	....	.....	7,381	....	7,381	....
Missouri	....	....	7,903	......	2,307	......	....	.....	10,210	....	10,210	....
Ohio	....	....	....	......	9,371	......	30	.....	9,401	....	9,401	578
Pennsylvania	....	....	....	......	....	......	37	.....	37	....	37	....
Texas	....	....	152	......	....	......	....	.....	152	....	152	....
West Virginia	....	....	....	......	....	......	458	.....	458	....	458	....
	....	....	77,709	......	29,562	......	3,308	.....	110,579	....	110,579	10,851

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke: Furnace use: Oven	Coke: Furnace use: Beehive	Coke: Foundry use: Oven	Coke: Foundry use: Beehive	Coke: Other industrial use: Oven	Coke: Other industrial use: Beehive	Coke: Domestic use: Oven	Coke: Domestic use: Beehive	Coke: Total coke: Oven	Coke: Total coke: Beehive	Coke: Total coke: Total	Total breeze
MISSOURI VALLEY REGION (Continued)												
NEBRASKA:												
From Illinois	....	....	488	......	....	......	....	.....	488	....	488	....
Ind. and Ky.	....	....	1,011	......	....	......	....	.....	1,011	....	1,011	....
Mich. and Wis.	....	....	1,376	......	....	......	183	.....	1,559	....	1,559	....
Minnesota	....	....	....	......	65	......	....	.....	65	....	65	....
Missouri	....	....	539	......	332	......	....	.....	871	....	871	....
Pennsylvania	....	....	....	......	....	......	....	.....	....	....	....	42
Texas	....	....	27	......	2,017	......	....	.....	2,044	....	2,044	5,240
West Virginia	....	....	....	......	....	......	83	.....	83	....	83	....
	....	....	3,441	......	2,414	......	266	.....	6,121	....	6,121	5,282
KANSAS:												
From Alabama	....	....	352	......	....	......	....	.....	352	....	352	....
Colorado	....	....	....	......	608	......	....	.....	608	....	608	....
Illinois	....	....	1,231	......	....	......	....	.....	1,231	....	1,231	....
Ind. and Ky.	....	....	215	......	....	......	....	.....	215	....	215	....
Mich. and Wis.	....	....	692	......	37	......	....	.....	729	....	729	....
Missouri	....	....	9,117	......	1,847	......	....	.....	10,964	....	10,964	....
Pennsylvania	....	....	....	45	....	......	....	.....	....	45	45	....
Texas	....	....	28	......	....	......	....	.....	28	....	28	....
	....	....	11,635	45	2,492	......	....	.....	14,127	45	14,172	....
LAKE DOCK REGION												
WISCONSIN:												
From Alabama	....	....	....	......	35	......	....	.....	35	....	35	....
Illinois	....	....	26,540	......	1,690	......	1,644	.....	29,874	....	29,874	2,658
Ind. and Ky.	....	....	39,325	......	442	......	2,842	.....	42,609	....	42,609	3,586
Mich. and Wis.	....	....	75,572	......	102,306	......	170,371	.....	348,249	....	348,249	57,427
Minnesota	....	....	1,547	......	234	......	1,190	.....	2,971	....	2,971	....
Missouri	....	....	291	......	239	......	....	.....	530	....	530	....
Ohio	....	....	....	......	....	......	107	.....	107	....	107	88
Pennsylvania	....	....	85	232	1,067	274	1,808	.....	2,960	506	3,466	....
Virginia	....	....	....	72	....	......	....	.....	....	72	72	....
West Virginia	....	....	....	......	....	......	2,882	.....	2,882	....	2,882	....
	....	....	143,360	304	106,013	274	180,844	.....	430,217	578	430,795	63,759

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
LAKE DOCK REGION (Continued)												
MINNESOTA:												
From Illinois	....	....	4,295	......	993	......	307	.....	5,595	....	5,595	....
Ind. and Ky.	....	....	6,667	......	....	......	2,530	.....	9,197	....	9,197	....
Mich. and Wis.	1,148	....	4,919	......	....	......	20,737	.....	26,804	....	26,804	....
Minnesota	464,190	....	17,900	......	31,827	......	76,413	.....	590,330	....	590,330	83,769
	465,338	....	33,781	......	32,820	......	99,987	.....	631,926	....	631,926	83,769
NORTH DAKOTA:												
From Ind. and Ky.	....	....	73	......	....	......	....	.....	73	....	73	....
Minnesota	....	....	149	......	193	......	352	.....	694	....	694	....
Missouri	....	....	102	......	....	......	....	.....	102	....	102	....
	....	....	324	......	193	......	352	.....	869	....	869	....
SOUTH DAKOTA:												
From Ind. and Ky.	....	....	77	......	....	......	....	.....	77	....	77	....
Mich. and Wis.	....	....	286	......	....	......	30	.....	316	....	316	....
Minnesota	....	....	....	......	....	......	526	.....	526	....	526	....
	....	....	363	......	....	......	556	.....	919	....	919	....
SOUTHEAST REGION												
VIRGINIA:												
From Alabama	....	....	8,902	......	1,232	......	1,026	.....	11,160	....	11,160	....
Ind. and Ky.	1,152	....	....	......	61,227	......	....	.....	62,379	....	62,379	....
New England	....	....	85	......	....	......	....	.....	85	....	85	....
Ohio	48,891	....	12,711	......	259,537	......	64	.....	321,203	....	321,203	....
Pennsylvania	....	28	1,231	915	1,650	268	....	.....	2,881	1,211	4,092	82
Tennessee	....	....	1,783	......	218	......	....	.....	2,001	....	2,001	....
Texas	....	....	1,096	......	....	......	....	.....	1,096	....	1,096	....
Virginia	....	77,829	....	11,986	....	60,496	....	191	....	150,502	150,502	9
West Virginia	....	....	....	3,154	....	......	180	.....	180	3,154	3,334	....
	50,043	77,857	25,808	16,055	323,864	60,764	1,270	191	400,985	154,867	555,852	91
WEST VIRGINIA:												
From Alabama	....	....	....	......	14,617	......	....	.....	14,617	....	14,617	....
Ind. and Ky.	....	....	....	......	6,501	......	4	.....	6,505	....	6,505	....
Mich. and Wis.	....	....	....	......	512	......	....	.....	512	....	512	....
N. J. and N. Y.	....	....	....	......	1	......	....	.....	1	....	1	....
Ohio	31,444	....	2,130	......	10,072	......	56	.....	43,702	....	43,702	8,551
Pennsylvania	....	24,295	254	16,932	1,298	40,885	....	.....	1,552	82,112	83,664	....
West Virginia	1,591,565	46,900	1,492	3,320	685,128	31,721	33	8	2,278,218	81,949	2,360,167	184,772
	1,623,009	71,195	3,876	20,252	718,129	72,606	93	8	2,345,107	164,061	2,509,168	193,323

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHEAST REGION (Continued)												
NORTH CAROLINA:												
From Alabama	....	....	11,082	......	3,249	......	4,389	.....	18,720	....	18,720	168
Ohio	....	....	....	......	1,477	......	....	.....	1,477	....	1,477	....
Tennessee	....	....	272	......	....	......	....	.....	272	....	272	....
Texas	....	....	63	......	....	......	....	.....	63	....	63	....
Virginia	....	....	....	1,432	....	408	....	169	....	2,009	2,009	....
West Virginia	....	....	....	30	....	......	....	.....	....	30	30	....
	....	....	11,417	1,462	4,726	408	4,389	169	20,532	2,039	22,571	168
SOUTH CAROLINA:												
From Alabama	....	....	4,255	......	1,605	......	2,267	.....	8,127	....	8,127	....
Ind. and Ky.	....	....	....	......	2,535	......	....	.....	2,535	....	2,535	....
Ohio	....	....	....	......	129	......	....	.....	129	....	129	1,546
Pennsylvania	....	....	....	......	1,633	......	....	.....	1,633	....	1,633	....
Tennessee	....	....	60	......	....	......	....	.....	60	....	60	....
Virginia	....	....	....	181	....	......	....	167	....	348	348	....
West Virginia	....	....	....	......	750	......	....	.....	750	....	750	1,000
	....	....	4,315	181	6,652	......	2,267	167	13,234	348	13,582	2,546
GEORGIA:												
From Alabama	....	....	13,284	......	12,075	......	14,384	.....	39,743	....	39,743	....
Tennessee	....	....	351	......	227	......	....	.....	578	....	578	....
	....	....	13,635	......	12,302	......	14,384	.....	40,321	....	40,321	....
FLORIDA:												
From Alabama	....	....	1,236	......	36,667	......	1,277	.....	39,180	....	39,180	13,439
Tennessee	....	....	240	......	34	......	....	.....	274	....	274	....
Texas	....	....	30	......	....	......	....	.....	30	....	30	....
	....	....	1,506	......	36,701	......	1,277	.....	39,484	....	39,484	13,439
KENTUCKY:												
From Alabama	....	....	11,543	......	927	......	2,084	.....	14,554	....	14,554	503
Illinois	....	....	....	......	....	......	....	.....	....	....	....	4,441
Ind. and Ky.	501,400	....	176	......	21,135	26,742	....	.....	522,711	26,742	549,453	43,678
Mich. and Wis.	....	....	....	......	....	......	....	.....	....	....	....	9,462
Missouri	....	....	91	......	....	......	....	.....	91	....	91	....
Ohio	....	....	18,887	......	62,030	......	27,835	.....	108,752	....	108,752	18,301
Pennsylvania	....	....	....	......	....	......	....	.....	....	....	....	571
Tennessee	....	....	286	......	4,785	......	....	.....	5,071	....	5,071	....
Texas	....	....	66	......	....	......	....	.....	66	....	66	....
Virginia	....	....	....	......	....	31	....	.....	....	31	31	....
West Virginia	....	....	....	232	....	8,942	83	.....	83	9,174	9,257	....
	501,400	....	31,049	232	88,877	35,715	30,002	.....	651,328	35,947	687,275	76,956

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHEAST REGION (Continued)												
TENNESSEE:												
From Alabama	......	......	47,243	......	17,982	......	6,415	......	71,640	......	71,640	85,216
Illinois	......	......	......	......	54	......	......	......	54	......	54	1,512
Ind. and Ky.	......	......	5,587	......	3,689	......	......	......	9,276	......	9,276	1,495
Minnesota	......	......	250	......	......	......	......	......	250	......	250	......
Missouri	......	......	322	......	......	......	......	......	322	......	322	......
Ohio	......	......	1,022	......	8,120	......	......	......	9,142	......	9,142	15,235
Tennessee	107,423	......	......	......	71,994	......	......	......	179,417	......	179,417	6,374
Texas	......	......	974	......	163	......	......	......	1,137	......	1,137	......
Virginia	......	......	......	2,140	......	1,580	......	101	......	3,821	3,821	......
West Virginia	......	......	......	505	......	......	......	......	......	505	505	708
	107,423	......	55,398	2,645	102,002	1,580	6,415	101	271,238	4,326	275,564	110,540
ALABAMA:												
From Alabama	4,309,057	......	182,903	......	94,173	......	37,003	......	4,623,136	......	4,623,136	183,734
Ind. and Ky.	......	......	......	......	10,741	......	......	......	10,741	......	10,741	8,370
Ohio	......	......	......	......	42,055	......	......	......	42,055	......	42,055	1,443
Tennessee	......	......	1,858	......	290	......	......	......	2,148	......	2,148	......
Texas	......	......	1,779	......	711	......	......	......	2,490	......	2,490	......
Virginia	......	68	......	54	......	......	......	......	......	122	122	......
	4,309,057	68	186,540	54	147,970	......	37,003	......	4,680,570	122	4,680,692	193,547
MISSISSIPPI:												
From Alabama	......	......	771	......	222	......	349	......	1,342	......	1,342	20
Missouri	......	......	......	......	......	......	......	......	......	......	......	36
	......	......	771	......	222	......	349	......	1,342	......	1,342	56
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION:												
LOUISIANA:												
From Alabama	......	......	4,508	......	45,510	......	1,486	......	51,504	......	51,504	44
Minnesota	......	......	30	......	......	......	......	......	30	......	30	......
Missouri	......	......	......	......	......	......	......	......	......	......	......	50
Tennessee	......	......	28	......	......	......	......	......	28	......	28	448
Texas	......	......	122	......	1,871	......	......	......	1,993	......	1,993	......
Virginia	......	......	......	90	......	......	......	......	......	90	90	......
	......	......	4,688	90	47,381	......	1,486	......	53,555	90	53,645	542
ARKANSAS:												
From Alabama	......	......	536	......	69	......	......	......	605	......	605	......
Ind. and Ky.	......	......	......	......	......	62	......	......	......	62	62	......
Missouri	......	......	......	......	36	......	......	......	36	......	36	......
Tennessee	......	......	102	......	......	......	......	......	102	......	102	......
Texas	......	......	1,563	......	1,021	......	......	......	2,584	......	2,584	95
	......	......	2,201	......	1,126	62	......	......	3,327	62	3,389	95

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION (Continued)												
OKLAHOMA:												
From Alabama	......	......	919	......	68	......	......	......	987	......	987	......
Illinois	......	......	......	......	26	......	......	......	26	......	26	18,882
Ind. and Ky.	......	......	334	......	......	......	......	......	334	......	334	10,615
Mich. and Wis.	......	......	701	......	......	......	......	......	701	......	701	......
Missouri	......	......	2,107	......	......	......	......	......	2,107	......	2,107	5,903
Pennsylvania	......	......	......	21	......	......	......	......	......	21	21	......
Texas	......	......	63	......	68	......	......	......	131	......	131	5,487
	......	......	4,124	21	162	......	......	......	4,286	21	4,307	40,887
TEXAS:												
From Alabama	......	......	27,191	......	6,818	......	912	......	34,921	......	34,921	966
Colorado	......	......	279	......	90	......	......	......	369	......	369	......
Mich. and Wis.	......	......	560	......	......	......	......	......	560	......	560	......
Missouri	......	......	694	......	......	......	......	......	694	......	694	567
Pennsylvania	......	709	......	40	......	......	......	......	......	749	749	......
Texas	406,674	......	2,646	......	6,589	......	......	......	415,909	......	415,909	25,524
Utah	......	34,202	......	......	......	......	......	......	......	34,202	34,202	7,858
	406,674	34,911	31,370	40	13,497	......	912	......	452,453	34,951	487,404	34,915
NEW MEXICO:												
From Alabama	......	......	......	......	670	......	......	......	670	......	670	......
Colorado	......	......	203	......	228	......	......	......	431	......	431	......
Minnesota	......	......	235	......	......	......	......	......	235	......	235	......
	......	......	438	......	898	......	......	......	1,336	......	1,336	......
ARIZONA:												
From Alabama	......	......	4,887	......	......	......	......	......	4,887	......	4,887	......
Colorado	......	......	......	......	304	......	......	......	304	......	304	......
Ind. and Ky.	......	......	246	......	232	......	......	......	478	......	478	......
Missouri	......	......	139	......	......	......	......	......	139	......	139	......
Texas	......	......	135	......	......	......	......	......	135	......	135	......
Utah	......	......	......	......	......	32	......	......	......	32	32	......
	......	......	5,407	......	536	32	......	......	5,943	32	5,975	......
COLORADO:												
From Alabama	......	......	38	......	......	......	......	......	38	......	38	......
Colorado	683,418	......	5,599	......	17,725	......	428	......	707,170	......	707,170	71,339
Illinois	......	......	1,293	......	......	......	......	......	1,293	......	1,293	......
Ind. and Ky.	......	......	645	......	......	......	......	......	645	......	645	......
Mich. and Wis.	......	......	174	......	630	......	......	......	804	......	804	......
Minnesota	......	......	36	......	......	......	......	......	36	......	36	......
Missouri	......	......	4,578	......	83	......	......	......	4,661	......	4,661	......
Texas	......	......	189	......	475	......	......	......	664	......	664	......
Utah	......	14,777	......	......	......	91	......	......	......	14,868	14,868	......
West Virginia	......	......	140	......	......	......	......	......	140	......	140	......
	683,418	14,777	12,692	......	18,913	91	428	......	715,451	14,868	730,319	71,339

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION (Continued)												
UTAH:												
From Alabama	....	....	2,560	......	131	......	....	.....	2,691	....	2,691	....
Colorado	....	....	34	......	1,538	......	....	.....	1,572	....	1,572	....
Illinois	....	....	212	......	....	......	....	.....	212	....	212	....
Mich. and Wis.	....	....	1,120	......	....	......	....	.....	1,120	....	1,120	....
Minnesota	....	....	162	......	....	......	....	.....	162	....	162	....
Missouri	....	....	6,785	......	....	......	....	.....	6,785	....	6,785	....
Utah	820,581	65,330	....	335	46,511	183	4,920	.....	872,012	65,848	937,860	84,991
	820,581	65,330	10,873	335	43,180	183	4,920	.....	884,554	65,848	950,402	84,991
NEVADA:												
From Colorado	....	....	26	......	....	......	....	.....	26	....	26	....
Utah	....	....	....	......	3,889	......	....	.....	3,889	....	3,889	....
	....	....	26	......	3,889	......	....	.....	3,915	....	3,915	....
WYOMING:												
From Mich. and Wis.	....	....	....	......	962	......	....	.....	962	....	962	....
Minnesota	....	....	86	......	250	......	....	.....	336	....	336	....
	....	....	86	......	1,212	......	....	.....	1,298	....	1,298	....
MONTANA:												
From Colorado	....	....	31	......	126	......	....	.....	157	....	157	....
Ind. and Ky.	....	....	1,919	......	343	......	....	.....	2,262	....	2,262	....
Mich. and Wis.	....	....	....	......	290	......	....	.....	290	....	290	....
Minnesota	....	....	34	......	1,159	......	....	.....	1,193	....	1,193	....
Utah	....	....	....	......	9,481	328	....	.....	9,481	328	9,809	28,611
	....	....	1,984	......	11,399	328	....	.....	13,383	328	13,711	28,611
IDAHO:												
From Alabama	....	....	33	......	341	......	....	.....	374	....	374	....
Colorado	....	....	29	......	....	......	....	.....	29	....	29	....
Ind. and Ky.	....	....	268	......	....	......	....	.....	268	....	268	....
Missouri	....	....	39	......	....	......	....	.....	39	....	39	....
Utah	....	....	....	......	2,243	291	48	.....	2,291	291	2,582	8,721
	....	....	369	......	2,584	291	48	.....	3,001	291	3,292	8,721

(Continued on next page)

TABLE 3. - Source and quantity of oven and beehive coke and breeze consumed in each State in 1949, in net tons (Continued)

Consuming State and source	Coke											Total breeze
	Furnace use		Foundry use		Other industrial use		Domestic use		Total coke			
	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Oven	Beehive	Total	
SOUTHWEST, MOUNTAIN, AND PACIFIC REGION (Continued)												
WASHINGTON:												
From Alabama ...	...	...	...	...	999	...	...	...	999	...	999	...
California ...	...	...	...	...	...	...	...	...	...	...	...	254
Illinois ...	...	...	165	...	...	...	...	...	165	...	165	...
Ind. and Ky. ...	...	...	514	...	...	...	...	...	514	...	514	...
Mich. and Wis. ...	...	...	863	...	40	...	...	...	903	...	903	...
Minnesota ...	...	...	848	...	895	...	...	...	1,743	...	1,743	...
Missouri ...	...	...	4,825	...	...	...	...	...	4,825	...	4,825	...
Tennessee ...	...	...	31	...	114	...	...	...	145	...	145	...
Utah ...	...	...	...	...	3,490	...	...	...	3,490	...	3,490	8,841
	...	...	7,246	...	5,538	...	...	...	12,784	...	12,784	9,095
OREGON:												
From Alabama ...	...	...	1,133	...	...	...	...	...	1,133	...	1,133	...
California ...	...	...	...	...	...	...	...	...	...	...	...	91
Illinois ...	...	...	38	...	...	...	...	...	38	...	38	...
Ind. and Ky. ...	...	...	934	...	36	...	...	...	970	...	970	388
Minnesota ...	...	...	812	...	...	...	...	...	812	...	812	...
Missouri ...	...	...	1,345	...	...	...	...	...	1,345	...	1,345	...
Utah ...	...	...	...	...	6,784	...	...	...	6,784	...	6,784	1,792
	...	...	4,262	...	6,820	...	...	...	11,082	...	11,082	2,271
CALIFORNIA:												
From Alabama ...	...	...	10,599	...	17,657	...	...	...	28,256	...	28,256	...
California ...	352,789	...	...	...	2,191	...	...	...	354,980	...	354,980	34,850
Colorado ...	...	...	...	...	4,083	...	...	...	4,083	...	4,083	...
Illinois ...	...	...	1,674	...	...	...	...	...	1,674	...	1,674	...
Ind. and Ky. ...	...	...	9,462	...	1,408	...	...	...	10,870	...	10,870	...
Mich. and Wis. ...	...	...	6,972	...	6,042	...	...	...	13,014	...	13,014	...
Minnesota ...	...	...	4,493	...	2,328	...	...	...	6,821	...	6,821	...
Missouri ...	...	...	21,288	...	1,585	...	...	...	22,873	...	22,873	...
Tennessee ...	...	...	31	...	1,627	...	...	...	1,658	...	1,658	...
Texas ...	17,743	...	66	...	...	...	...	...	17,809	...	17,809	...
Utah ...	...	17,379	...	...	1,266	423	...	...	1,266	17,802	19,068	715
West Virginia ...	...	...	...	464	...	...	...	...	...	464	464	...
	370,532	17,379	54,585	464	38,187	423	...	...	463,304	18,266	481,570	35,565

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons
Produced in Alabama

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	4,309,057	182,903	94,173	37,003	4,623,136	183,734
Arizona	....	4,887	....	....	4,887	....
Arkansas	....	536	69	....	605	....
California	....	10,599	17,657	....	28,256	....
Colorado	....	38	....	....	38	....
Florida	....	1,236	36,667	1,277	39,180	13,439
Georgia	....	13,284	12,075	14,384	39,743	....
Idaho	....	33	341	....	374	....
Illinois	....	11,928	22,757	22,297	56,982	....
Indiana	....	997	492	42	1,531	....
Iowa	....	....	....	99	99	....
Kansas	....	352	....	....	352	....
Kentucky	....	11,543	927	2,084	14,554	503
Louisiana	....	4,508	45,510	1,486	51,504	444
Maryland	....	180	....	....	180	....
Michigan	....	46,470	....	....	46,470	....
Mississippi	....	771	222	349	1,342	20
Missouri	....	482	214	276	972	....
New Mexico	....	....	670	....	670	....
New York	....	2,548	....	....	2,548	....
North Carolina	....	11,082	3,249	4,389	18,720	168
Ohio	....	16,733	....	....	16,733	....
Oklahoma	....	919	68	....	987	....
Oregon	....	1,133	....	....	1,133	....
Pennsylvania	....	166	....	....	166	....
South Carolina	....	4,255	1,605	2,267	8,127	....
Tennessee	....	47,243	17,982	6,415	71,640	85,216
Texas	....	27,191	6,818	912	34,921	966
Utah	....	2,560	131	....	2,691	....
Virginia	....	8,902	1,232	1,026	11,160	....
Washington	....	....	999	....	999	....
West Virginia	....	....	14,617	....	14,617	....
Wisconsin	....	....	35	....	35	....
Exported	2,964	7,194	13,753	....	23,911	19,914
Total	4,312,021	420,673	292,263	94,306	5,119,263	304,004

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in California

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
California	352,789	....	2,191	....	354,980	34,850
Oregon	....	....	....	....	....	91
Washington	....	....	....	....	....	254
Total	352,789	....	2,191	....	354,980	35,195

Produced in Colorado

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Arizona	....	....	304	....	304	....
California	....	....	4,083	....	4,083	....
Colorado	683,418	5,599	17,725	428	707,170	71,339
Idaho	....	29	....	....	29	....
Illinois	....	....	5,568	....	5,568	....
Iowa	....	27	....	....	27	....
Kansas	....	....	608	....	608	....
Missouri	....	....	200	....	200	....
Montana	....	31	126	....	157	....
Nevada	....	26	....	....	26	....
New Mexico	....	203	228	....	431	....
New York	....	164	54	....	218	....
Pennsylvania	....	....	1,940	....	1,940	....
Texas	....	279	90	....	369	....
Utah	....	34	1,538	....	1,572	....
Exported	....	....	9,423	....	9,423	....
Total	683,418	6,392	41,887	428	732,125	71,339

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Connecticut, Massachusetts, and Rhode Island

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Connecticut	....	40,261	202,145	102,408	344,814	39,846
Maine	....	5,297	11,448	16,222	32,967	....
Massachusetts	147,362	55,116	322,347	365,675	890,500	88,683
New Hampshire	....	3,917	1,430	17,067	22,414	....
New York	....	18,404	78	39	18,521	....
Ohio	....	338	....	....	338	....
Pennsylvania	....	1,502	....	....	1,502	....
Rhode Island	....	10,673	54,539	59,756	124,968	21,712
Vermont	....	2,706	126	2,042	4,874	....
Virginia	....	85	....	....	85	....
Exported	....	209	7,686	....	7,895	....
Total	147,362	138,508	599,799	563,209	1,448,878	150,241

Produced in Illinois

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
California	....	1,674	....	....	1,674	....
Colorado	....	1,293	....	....	1,293	....
Illinois	2,737,580	83,358	54,886	101,935	2,977,759	220,948
Indiana	43,063	17,663	13,718	550	74,994	26,338
Iowa	....	19,735	12,731	141	32,607	2,726
Kansas	....	1,231	....	....	1,231	....
Kentucky	....	....	....	....	....	4,441
Michigan	....	79,905	522	....	80,427	39
Minnesota	....	4,295	993	307	5,595	....
Missouri	....	881	462	35	1,378	41
Nebraska	....	488	....	....	488	....
New York	....	414	....	....	414	....
Ohio	717	2,768	1,752	....	5,237	43
Oklahoma	....	....	26	....	26	18,882
Oregon	....	38	....	....	38	....
Pennsylvania	....	2,338	....	....	2,338	....
Tennessee	....	....	54	....	54	1,512
Utah	....	212	....	....	212	....
Washington	....	165	....	....	165	....
Wisconsin	....	26,540	1,690	1,644	29,874	2,658
Exported	....	236	....	....	236	....
Total	2,781,360	243,234	86,834	104,612	3,216,040	277,628

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)
Produced in Indiana and Kentucky

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	....	....	10,741	....	10,741	8,370
Arizona	....	246	232	....	478	....
Arkansas	....	....	62	....	62	....
California	....	9,462	1,408	....	10,870	....
Colorado	....	645	....	....	645	....
Idaho	....	268	....	....	268	....
Illinois	1,430,436	91,546	20,943	17,040	1,559,965	41,180
Indiana	5,480,521	100,105	148,930	121,796	5,851,352	512,877
Iowa	....	33,280	5,153	1,830	40,263	7,547
Kansas	....	215	....	....	215	....
Kentucky	501,400	176	47,877	....	549,453	43,678
Michigan	....	60,634	9,920	3,514	74,068	....
Minnesota	....	6,667	....	2,530	9,197	....
Missouri	....	5,142	657	82	5,881	....
Montana	....	1,919	343	....	2,262	....
Nebraska	....	1,011	....	....	1,011	....
New York	2,791	721	34	....	3,546	....
North Dakota	....	73	....	....	73	....
Ohio	23,638	24,092	2,000	32	49,762	279
Oklahoma	....	334	....	....	334	10,615
Oregon	....	934	36	....	970	388
Pennsylvania	4,614	2,126	....	....	6,740	....
South Carolina	....	....	2,535	....	2,535	....
South Dakota	....	77	....	....	77	....
Tennessee	....	5,587	3,689	....	9,276	1,495
Virginia	1,152	....	61,227	....	62,379	....
Washington	....	514	....	....	514	....
West Virginia	....	....	6,501	4	6,505	....
Wisconsin	....	39,325	442	2,842	42,609	3,586
Exported	....	8,349	1,876	....	10,225	....
Total	7,444,552	393,448	324,606	149,670	8,312,276	630,015

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Maryland

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Maryland	2,049,692	856	3,883	....	2,054,431	226,333
New Jersey	....	....	....	....	....	16,919
Pennsylvania	....	....	....	....	....	41
Total	2,049,692	856	3,883	....	2,054,431	243,293

Produced in Michigan and Wisconsin

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
California	....	6,972	6,042	....	13,014	....
Colorado	....	174	630	....	804	....
Illinois	76,062	20,587	16,718	34,276	147,643	13,101
Indiana	47,999	17,675	5,259	1,724	72,657	9,919
Iowa	....	9,231	....	713	9,944	....
Kansas	....	692	37	....	729	....
Kentucky	....	....	....	....	....	9,462
Michigan	1,359,669	249,498	162,015	228,342	1,999,524	221,121
Minnesota	1,148	4,919	....	20,737	26,804	....
Missouri	....	1,743	....	....	1,743	....
Montana	....	....	290	....	290	....
Nebraska	....	1,376	....	183	1,559	....
New Jersey	....	....	....	....	....	100
New York	2,663	23,721	57,715	328	84,427	6,582
Ohio	9,990	76,243	174	....	86,407	207
Oklahoma	....	701	....	....	701	....
Pennsylvania	....	913	....	....	913	387
Rhode Island	....	921	....	....	921	....
South Dakota	....	286	....	30	316	....
Texas	....	560	....	....	560	....
Utah	....	1,120	....	....	1,120	....
Washington	....	863	40	....	903	....
West Virginia	....	....	512	....	512	....
Wisconsin	....	75,572	102,306	170,371	348,249	57,427
Wyoming	....	....	962	....	962	....
Exported	72,443	71,755	19,120	27,479	190,797	6,905
Total	1,569,974	565,522	371,820	484,183	2,991,499	325,211

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)
Produced in Minnesota

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
California	....	4,493	2,328	....	6,821	....
Colorado	....	36	....	....	36	....
Illinois	....	4,265	....	....	4,265	....
Indiana	276	521	390	....	1,187	....
Iowa	....	7,381	....	....	7,381	....
Louisiana	....	30	....	....	30	....
Maryland	....	664	....	....	664	....
Michigan	....	50,638	38	....	50,676	....
Minnesota	464,190	17,900	31,827	76,413	590,330	83,769
Missouri	....	26	....	....	26	....
Montana	....	34	1,159	....	1,193	....
Nebraska	....	....	65	....	65	....
New Jersey	....	638	....	....	638	....
New Mexico	....	235	....	....	235	....
North Dakota	....	149	193	352	694	....
Ohio	....	1,089	....	....	1,089	....
Oregon	....	812	....	....	812	....
Pennsylvania	....	2,263	....	....	2,263	....
South Dakota	....	....	....	526	526	....
Tennessee	....	250	....	....	250	....
Utah	....	162	....	....	162	....
Washington	....	848	895	....	1,743	....
Wisconsin	....	1,547	234	1,190	2,971	....
Wyoming	....	86	250	....	336	....
Exported	....	6,390	1,616	4,993	12,999	....
Total	464,466	100,457	38,995	83,474	687,392	83,769

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Missouri

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Arizona	....	139	....	....	139	....
Arkansas	....	....	36	....	36	....
California	....	21,288	1,585	....	22,873	....
Colorado	....	4,578	83	....	4,661	....
Idaho	....	39	....	....	39	....
Illinois	15,992	31,200	3,428	186	50,806	3,809
Iowa	....	7,903	2,307	....	10,210	....
Kansas	....	9,117	1,847	....	10,964	....
Kentucky	....	91	....	....	91	....
Louisiana	....	....	....	....	....	50
Mississippi	....	....	....	....	....	36
Missouri	....	53,538	35,825	13,538	102,901	5,442
Nebraska	....	539	332	....	871	....
North Dakota	....	102	....	....	102	....
Ohio	....	431	....	....	431	21
Oklahoma	....	2,107	....	....	2,107	5,903
Oregon	....	1,345	....	....	1,345	....
Pennsylvania	....	128	....	....	128	....
Tennessee	....	322	....	....	322	....
Texas	....	694	....	....	694	567
Utah	....	6,785	....	....	6,785	....
Washington	....	4,825	....	....	4,825	....
Wisconsin	....	291	239	....	530	....
Exported	....	565	117	....	682	....
Total	15,992	146,027	45,799	13,724	221,542	15,828

Produced in New Jersey and New York

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Connecticut	....	1,476	2,447	121	4,044	....
Illinois	141	....	....	....	141	....
Maryland	1,299	....	4,975	....	6,274	....
Massachusetts	....	....	11,120	14,083	25,203	....
Michigan	....	....	56,592	4,172	60,764	....
New Hampshire	....	....	....	2,678	2,678	....
New Jersey	....	38,066	537,525	264,833	840,424	82,712
New York	3,047,170	23,900	1,544,694	491,911	5,107,675	457,306
Ohio	78,348	....	24,514	....	102,862	....
Pennsylvania	162,598	1,717	10,628	289	175,232	....
Rhode Island	....	77	....	....	77	....
Vermont	....	....	3,143	6,854	9,997	....
West Virginia	....	....	1	....	1	....
Exported	....	11,207	51,420	56,954	119,581	302
Total	3,289,556	76,443	2,247,059	841,895	6,454,953	540,320

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)
Produced in Ohio

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	....	....	42,055	....	42,055	1,443
Illinois	47,922	30	3,570	2,361	53,883	1,905
Indiana	....	7,073	3,153	11,269	21,495	1,842
Iowa	....	....	9,371	30	9,401	578
Kentucky	....	18,887	62,030	27,835	108,752	18,301
Michigan	....	8,289	5,620	1,652	15,561	....
New Jersey	....	648	....	....	648	....
New York	....	18,968	834	....	19,802	5,258
North Carolina	....	....	1,477	....	1,477	....
Ohio	7,634,744	130,195	403,862	100,077	8,268,878	724,264
Pennsylvania	37,533	20,269	624	396	58,822	5,878
South Carolina	....	....	129	....	129	1,546
Tennessee	....	1,022	8,120	....	9,142	15,235
Virginia	48,891	12,711	259,537	64	321,203	....
West Virginia	31,444	2,130	10,072	56	43,702	8,551
Wisconsin	....	....	....	107	107	88
Exported	....	11,396	74	....	11,470	....
Total	7,800,534	231,618	810,528	143,847	8,986,527	784,889

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Pennsylvania

Destination	Coke					Total breeze
	Fufnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Connecticut	....	319	....	....	319	....
Delaware	....	2,211	309	481	3,001	5,275
District of Columbia	....	129	30	....	159	....
Illinois	37,119	101	1,947	1,706	40,873	....
Indiana	4,127	429	2,627	416	7,599	....
Iowa	....	....	....	37	37	....
Kansas	....	45	....	....	45	....
Kentucky	....	....	....	....	....	571
Maine	....	....	132	....	132	....
Maryland	468,038	30,342	30,044	1,262	529,686	3,472
Massachusetts	58	....	185	4,785	5,028	331
Michigan	....	534	3,756	3,211	7,501	288
Missouri	....	57	....	....	57	....
Nebraska	....	....	....	....	....	42
New Hampshire	....	....	266	157	423	....
New Jersey	....	46,662	24,382	15,671	86,715	7,548
New York	22,562	24,862	18,157	17,633	83,214	3,371
Ohio	1,023,888	28,897	27,789	22,933	1,103,507	5,159
Oklahoma	....	21	....	....	21	....
Pennsylvania	14,928,769	210,093	355,037	137,382	15,631,281	1,235,038
South Carolina	....	....	1,633	....	1,633	....
Texas	709	40	....	....	749	....
Vermont	....	....	157	....	157	....
Virginia	28	2,146	1,918	....	4,092	82
West Virginia	24,295	17,186	42,183	....	83,664	....
Wisconsin	....	317	1,341	1,808	3,466	....
Exported	795	4,242	26,283	538	31,858	....
Total	16,510,388	368,633	538,176	208,020	17,625,217	1,261,177

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Tennessee and Texas

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Alabama	....	3,637	1,001	....	4,638	....
Arizona	....	135	....	....	135	....
Arkansas	....	1,665	1,021	....	2,686	95
California	17,743	97	1,627	....	19,467	....
Colorado	....	189	475	....	664	....
Florida	....	270	34	....	304	....
Georgia	....	351	227	....	578	....
Illinois	20,116	....	....	....	20,116	....
Indiana	....	....	63	....	63	....
Iowa	....	152	....	....	152	....
Kansas	....	28	....	....	28	....
Kentucky	....	352	4,785	....	5,137	....
Louisiana	....	150	1,871	....	2,021	448
Maryland	....	97	....	....	97	....
Michigan	....	28	....	....	28	....
Nebraska	....	27	2,017	....	2,044	5,240
North Carolina	....	335	....	....	335	....
Ohio	3,608	21,116	....	....	24,724	....
Oklahoma	....	63	68	....	131	5,487
Pennsylvania	....	1,253	....	....	1,253	....
South Carolina	....	60	....	....	60	....
Tennessee	107,423	974	72,157	....	180,554	6,374
Texas	406,674	2,646	6,589	....	415,909	25,524
Virginia	....	2,879	218	....	3,097	....
Washington	....	31	114	....	145	....
Exported	22,736	2,096	6,492	....	31,324	15,016
Total	578,300	38,631	98,759	....	715,690	58,184

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)

Produced in Utah

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
Arizona	....	....	32	....	32	....
California	17,379	....	1,689	....	19,068	715
Colorado	14,777	....	91	....	14,868	....
Idaho	....	....	2,534	48	2,582	8,721
Montana	....	....	9,809	....	9,809	28,611
Nevada	....	....	3,889	....	3,889	....
Oregon	....	....	6,784	....	6,784	1,792
Pennsylvania	....	....	....	....	....	39
Texas	34,202	....	....	....	34,202	7,858
Utah	885,911	335	46,694	4,920	937,860	84,991
Washington	....	....	3,490	....	3,490	8,841
Total	952,269	335	75,012	4,968	1,032,584	141,568

Produced in Virginia

Destination	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	Total breeze
Alabama	68	54	....	....	122	....
Kentucky	....	....	31	....	31	....
Louisiana	....	90	....	....	90	....
Michigan	....	701	....	....	701	....
Missouri	....	....	....	66	66	....
North Carolina	....	1,432	408	169	2,009	....
South Carolina	....	181	....	167	348	....
Tennessee	....	2,140	1,580	101	3,821	....
Virginia	77,829	11,986	60,496	191	150,502	9
Wisconsin	....	72	....	....	72	....
Total	77,897	16,656	62,515	694	157,762	9

(Continued on next page)

TABLE 4. - Distribution of coke and breeze shipped or used by producer in 1949, in net tons (Continued)
Produced in West Virginia

Destination	Coke					Total breeze
	Furnace use	Foundry use	Other industrial use	Domestic use	Total coke	
California	....	464	....	....	464	....
Colorado	....	140	....	....	140	....
Illinois	....	634	900	5,042	6,576	266
Indiana	....	91	....	3,026	3,117	....
Iowa	....	....	....	458	458	....
Kentucky	....	232	8,942	83	9,357	....
Maine	....	....	100	....	100	....
Maryland	17,581	1,238	8,848	91	27,758	....
Michigan	40	1,418	....	12,183	13,641	1,304
Nebraska	....	....	....	83	83	....
New Jersey	....	2,224	1,583	402	4,209	....
New York	454	49	888	....	1,391	2,681
North Carolina	....	30	....	....	30	....
Ohio	654,042	2,890	4,165	8,583	669,680	5,828
Pennsylvania	173,701	11,631	29,436	29,700	244,468	10,756
South Carolina	....	....	750	....	750	1,000
Tennessee	....	505	....	....	505	708
Virginia	....	3,154	....	180	3,334	....
West Virginia	1,638,465	4,812	716,849	41	2,360,167	184,772
Wisconsin	....	....	....	2,882	2,882	....
Exported	....	1,923	85	56	2,064	....
Total	2,484,283	31,435	772,546	62,810	3,351,074	207,315

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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary   JAMES BOYD, Director

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FOR RELEASE SEPTEMBER 28, 1950.

MINERAL MARKET REPORT
MMS NO. 1914

PHOSPHATE ROCK INDUSTRY OF THE UNITED STATES IN 1949

GENERAL CONDITION

The tonnage of phosphate rock mined in the United States in 1949 dropped from the record high of 1948 (9,388,160 long tons) to 8,877,474 tons, according to reports submitted by producers to the Bureau of Mines. Decreases were shown in Florida and Tennessee. There was a considerable increase in the mine production of Western rock, which, however, did not approach the 1947 record high. Supplies of phosphate rock were plentiful and adequate to meet demands.

Contrary to the trend in mine production, the quantity sold or used increased from 8,668,769 long tons in 1948 to 8,986,933 tons in 1949. Decreased sales of Idaho and Wyoming phosphate rock were more than compensated for by increases in Florida, Tennessee, and Montana. The total value of the phosphate rock sold or used in 1949 rose to $51,415,027. The P_2O_5 content of the rock sold or used in 1949 increased to 2,913,796 long tons from 2,810,206 in 1948. This was a new record high, nearly 11,000 tons above the previous record of 1947 (2,903,082 tons).

Imports increased both in quantity and value in 1949. Exports in 1949, as reported by producers, were likewise above those in 1948 in both categories. Apparent domestic consumption increased slightly in 1949, to 7,735,005 long tons. Stocks at the end of 1949 had declined sharply.

Prepared by Bertrand L. Johnson and E. M. Tucker, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

Salient statistics of the phosphate-rock industry in the United States, 1948-49

	1948				1949			
	Long tons		Value at mines		Long tons		Value at mines	
	Rock	P_2O_5 content	Total	Average	Rock	P_2O_5 content	Total	Average
Production (mined)........	9,388,160	3,035,108	(1/)	(1/)	8,877,474	2,866,897	(1/)	(1/)
Sold or used by producers:								
Florida:								
Land pebble	6,421,725	2,155,037	$37,070,381	$5.77	6,715,097	2,265,780	$37,339,985	$5.56
Soft rock	69,335	13,992	293,927	4.24	77,083	15,652	344,787	4.47
Hard rock	48,198	17,404	368,586	7.65	23,804	8,522	173,211	7.28
Total Florida	6,539,258	2,186,433	37,732,894	5.77	6,815,989	2,289,954	37,857,983	5.55
Tennessee 2/	1,307,507	369,612	8,231,251	6.30	3/1,344,470	3/ 377,081	3/ 9,067,589	3/ 6.74
Idaho	4/ 434,375	4/ 131,284	4/ 2,122,089	4/ 4.89	5/ 471,305	5/ 133,794	5/ 1,915,125	5/ 4.06
Montana	248,683	78,421	1,720,254	6.92	355,169	112,967	2,574,330	7.25
Wyoming	138,946	44,456	695,110	5.00	(6/)	(6/)	(6/)	(6/)
Total United States..	8,668,769	2,810,206	50,501,598	5.83	8,986,933	2,913,796	51,415,027	5.72
Imports 7/	48,104	(1/)	608,932	12.66	64,891	(1/)	821,842	12.66
Exports 8/	1,016,792	(1/)	6,144,298	6.04	1,316,819	(1/)	8,005,521	6.08
Apparent consumption 9/.	7,700,081	(1/)	----------	-----	7,735,005	(1/)	----------	-----
Stocks in producers' hands, Dec. 31:								
Florida	1,145,000	376,000	(1/)	(1/)	873,000	292,000	(1/)	(1/)
Tennessee 2/10/.........	582,000	150,000	(1/)	(1/)	494,000	137,000	(1/)	(1/)
Western States.........	92,000	28,000	(1/)	(1/)	31,000	10,000	(1/)	(1/)
Total stocks	1,819,000	563,000	(1/)	(1/)	1,398,000	439,000	(1/)	(1/)

1/ Data not available.
2/ Includes sintered matrix.
3/ Includes small quantity from Virginia.
4/ Includes Utah.
5/ Includes Wyoming.
6/ Included in Idaho.
7/ Market value (or price) at port of shipment and time of exportation to the United States.
8/ Exports as reported by producers.
9/ Quantity sold or used by producers plus imports minus exports.
10/ Includes brown-rock matrix of sinter grade, sintered brown rock, and some matrix of washer grade.

Phosphate rock sold or used by producers in the United States, 1948-49, by grades and States

Grades - B. P. L. 1/ content (percent)	Florida		Tennessee 2/		Western States		United States	
	Long tons	Per-cent of total	Long tons	Per-cent of total	Long tons	Per-cent of total	Long tons	Per-cent of total
1948								
Below 60	69,335	1	559,827	43	3,108	(3/)	632,270	7
60 to 66	———	---	506,833	39	192,527	24	699,360	8
68 basis, 66 minimum	643,627	10	15,466	1	287,871	35	946,964	11
70 minimum	864,756	13	224,453	17	338,498	41	1,427,707	16
72 minimum	1,231,699	19	———	---	———	---	1,231,699	14
75 basis, 74 minimum	2,802,851	43	924	(3/)	———	---	2,803,775	33
77 basis, 76 minimum	926,990	14	———	---	———	---	926,990	11
Above 85 (apatite)	———	---	———	---	———	---	———	---
Undistributed	———	---	4	(3/)	———	---	4	(3/)
	6,539,258	100	1,307,507	100	822,004	100	8,668,769	100
1949								
Below 60	82,420	1	556,024	41	163,365	20	801,809	9
60 to 66	32,013	(3/)	305,172	23	38,362	4	375,547	4
68 basis, 66 minimum	254,810	4	341,819	26	332,010	40	928,639	10
70 minimum	1,062,628	16	138,570	10	252,876	31	1,454,074	16
72 minimum	1,254,545	18	———	----	39,861	5	1,294,406	15
75 basis, 74 minimum	2,706,992	40	667	(3/)	———	---	2,707,659	30
77 basis, 76 minimum	1,422,581	21	———	---	———	---	1,422,581	16
Above 85 (apatite) Undistributed	———	---	2,218	(3/)	———	---	2,218	(3/)
	6,815,989	100	1,344,470	100	826,474	100	8,986,933	100

1/ Bone phosphate of lime.
2/ Includes a small quantity from Virginia in 1949.
3/ Less than 0.5 percent.

Phosphate rock sold or used by producers in the United States, 1948-49, by uses and States

Uses	Florida		Tennessee 1/		Western States		United States	
	Long tons	Per-cent of total	Long tons	Per-cent of total	Long tons	Per-cent of total	Long tons	Per-cent of total
1948								
Domestic:								
Superphosphates	5,117,520	78	231,654	18	315,764	38	5,664,938	65
Phosphates, phosphoric acid, phosphorus, ferrophosphorus	316,658	5	761,698	58	9,527	1	1,087,883	13
Direct application to soil	513,495	8	270,899	21	7,433	1	791,827	9
Fertilizer filler	19,323	(2/)	11,579	1	-------	--	30,902	(2/)
Stock and poultry feed	40,510	1	-------	--	-------	--	40,510	1
Undistributed 3/	99	(2/)	31,677	2	4,141	1	35,917	(2/)
Exports 4/	531,653	8	-------	--	485,139	59	1,016,792	12
	6,539,258	100	1,307,507	100	822,004	100	8,668,769	100
1949								
Domestic:								
Superphosphates	4,965,060	73	378,760	28	254,603	31	5,598,423	62
Phosphates, phosphoric acid, phosphorus, ferrophosphorus	342,282	5	735,309	55	177,024	22	1,254,615	14
Direct application to soil	522,310	8	208,829	16	1,556	(2/)	732,695	8
Fertilizer Filler	6,269	(2/)	12,546	1	-------	--	18,815	(2/)
Stock and poultry feed	56,703	1	5,533	(2/)	-------	--	62,236	1
Undistributed 3/	-------	--	1,275	(2/)	2,055	(2/)	3,330	(2/)
Exports 4/	923,365	13	2,218	(2/)	391,236	47	1,316,819	15
	6,815,989	100	1,344,470	100	826,474	100	8,986,933	100

1/ Includes small quantity from Virginia in 1949.

2/ Less than 0.5 percent.

3/ Includes phosphate rock used in pig-iron blast furnaces, parting compounds, research, defluorinated phosphate rock, refractories, and other uses.

4/ As reported to the Bureau of Mines by domestic producers.

(Interior - Duplicating Section, Washington, D. C.)

Production of tin in 1949 from domestic mines totaled 68 long tons of which 51 tons was mined in Alaska and 17 in Colorado. Domestic primary smelter output remained virtually unchanged, and secondary production was 17 percent less than in 1948. On a tonnage basis pig tin imports held the dominant position in the United States foreign trade in tin for the second time since 1941. Malaya was the principal source of metal, furnishing 57 percent of the total. Other important sources were Belgium, the Netherlands, Belgian Congo, China, and the United Kingdom. Imports from the Netherlands and the United Kingdom increased substantially over 1948. Imports of tin in concentrates increased 2 percent in 1949. Bolivia accounted for 50 percent of the total. Indonesia ranked second and accounted for 40 percent. Other sources included Thailand, Belgian Congo, China, Mexico, Portugal, Malaya and Burma.

The Government retained control of distribution and use of the domestic supply for the eighth consecutive year and fixed the price. However, controls were successively relaxed until effective December 1 only certain requirements for reporting and exports remained. Consumption of tin in the United States was 20 percent less than in 1948. The use of primary tin decreased 21 percent and secondary 18 percent. In 1949, for the first time since 1941, solder resumed its prewar position in importance as the second largest user of tin. Significant tonnages of tin were used in the manufacture of chemicals and tin oxide. Tin plate and terneplate used nearly two-thirds the total primary tin, but consumed 6 percent less than in 1948.

Consumption of tin in United States, 1948-49, by finished products, in long tons of contained tin

Produce	1948			1949		
	Primary	Secondary	Total	Primary	Secondary	Total
Tin plate	31,503	-	31,503	29,617	-	29,617
Terneplate	420	252	672	278	348	626
Solder	15,038	6,087	21,125	8,150	7,206	15,356
Babbitt	3,507	3,546	7,053	2,030	2,515	4,545
Bronze and brass	3,952	17,739	21,691	2,360	12,103	14,463
Collapsible tubes	600	39	639	672	43	715
Tinning	2,298	223	2,521	1,916	158	2,074
Foil	179	60	239	161	38	199
Pipe and tubing	257	66	323	193	38	231
Type and metal	129	1,787	1,916	81	1,693	1,774
Bar tin	916	132	1,048	636	159	795
Miscellaneous alloys	170	211	381	245	145	390
White metal	39	150	189	146	107	253
Chemicals other than oxide	855	633	1,488	64	390	454
Tin oxide				270	237	507
Miscellaneous				344	63	407
Total	59,863	30,925	90,788	47,163	25,243	72,406

Stocks of pig tin and tin in ore were nearly 60 percent more at the end of 1949 than at the beginning of the year. Industry stocks of primary tin were 4 percent less than in 1948; but tin platers increased their inventories by 19 percent. Government stocks of tin metal were less at the end of the year whereas concentrates increased.

The domestic price for Grade A tin was $1.03 from June 1, 1948 to September 28, 1949, then successively dropped until it reached 77.50 cents December 29. The domestic market was free upon relaxation of control August 26.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary   JAMES BOYD, Director

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MINERAL MARKET REPORT
MMS NO. 1915

OCT 9 1950

ABRASIVE MATERIALS IN 1949

Output of pumice and pumicite rose to a new record, and production of diatomite increased slightly over the high level of 1948, according to reports by producers to the Bureau of Mines, Unites States Department of the Interior. Sales of tripoli and emery were somewhat less than in 1948 and quartz, grindstones and garnet decreased substantially. Production of silicon carbide in 1949 increased 7 percent to the highest figure since the record year 1943. Production of aluminum oxide and shipments of metallic abrasives in 1949 were 19 and 29 percent, respectively, below the previous year.

Diatomite. - The high levels achieved in the production of diatomite in recent years were continued in 1949. Output data for that year, however, may not be published. Average annual production for the 3-year period 1945-47 was 213,588 short tons valued at $4,307,088. The largest producing State was California. Other States in which diatomite was produced in 1949 were Nevada, Oregon, and Washington. The major use for diatomite was in filtration.

Tripoli. - Sales of tripoli, amorphous silica, and rottenstone in 1949 were 5 percent less in tonnage and 2 percent less in value than in 1948. States producing these substances were Illinois, Missouri, and Pennsylvania. The chief use of tripoli was as an abrasive in polishing and buffing compositions.

Quartz. - Sales of crude, crushed and ground quartz from pegmatite veins or dikes in 1949 were substantially less than in 1948, although higher in tonnage than in 1947. Principal uses for which this material was consumed included the manufacture of ferrosilicon and glass.

Prepared by Robert W. Metcalf, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

Salient statistics of the abrasive industries in the United States, 1948-49

	1948		1949		Percent of change in 1949	
	Short tons	Value	Short tons	Value	Short tons	Value
Natural abrasives (domestic) sold or used by producers:						
Diatomite	(1/)	(1/)	(1/)	(1/)	.....	.....
Tripoli..................	26,845	$705,523	25,525	$690,564	-5	-2
Quartz...................	161,861	750,667	107,552	475,491	-34	-37
Ground sand and sandstone.	702,572	5,814,664	610,789	5,258,464	-13	-10
Grindstones..............	7,921	402,667	4,479	244,704	-43	-39
Pulpstones...............	33	2,100	28	1,975	-15	-6
Millstones...............	(2/)	17,733	(2/)	9,400	.....	-47
Tube-mill liners.........	1,297	41,555	1,166	47,093	-10	+13
Grinding pebbles.........	4,026	101,583	2,374	64,038	-41	-37
Pumice and pumicite......	607,746	2,501,906	716,742	2,369,082	+18	-5
Garnet...................	8,039	587,797	6,578	505,231	-18	-14
Emery....................	5,405	69,408	4,909	60,917	-9	-12
Artificial abrasives:						
Silicon carbide-production 3/	63,033	5,874,731	67,539	6,055,763	+7	+3
Aluminum oxide-production 3/	154,972	10,279,583	125,806	8,500,074	-19	-17
Metallic abrasives (steel shot and grit) shipments	147,218	15,174,773	104,778	9,312,368	-29	-39
Foreign trade (natural and artificial abrasives):						
Imports	.....	4/45,165,069	.....	26,336,325	....	-42
Exports	.....	4/15,267,670	.....	17,447,399	....	+14

1/ Average annual figure for 1945-47 was 213,588 short tons valued at $4,307,088; Bureau of Mines not at liberty to publish annual data separately.
2/ Tonnage not recorded.
3/ Includes Canadian production.
4/ Revised to include data for artificial abrasives.

Ground Sand and Sandstone. - Sales of ground sand and sandstone in 1949 decreased 12 percent in tonnage and 9 percent in value from the record year 1948 and totaled 610,789 short tons valued at $5,258,464. Illinois, the largest producing State, accounted for 36 percent of the total sales. Other States producing sizeable tonnages were New Jersey, Ohio, Pennsylvania, and West Virginia.

The chief consumers of ground sand and sandstone in 1948, according to companies reporting 93 percent of the total sales, were the pottery, porcelain and tile industries (40 percent of the tonnage for which uses were reported), abrasive industries, chiefly cleansing and scouring compounds (23 percent), foundries (13 percent), glass (6 percent) and filler (6 percent).

Ground sand and sandstone sold or used by producers in the United States, 1947-49, by States

State	1947		1948		1949	
	Short tons	Value	Short tons	Value	Short tons	Value
Georgia.............	1/4,419	1/$30,971	1/1,909	1/$17,183	771	$7,712
Illinois............	198,500	1,614,173	232,971	1,943,284	217,577	1,887,144
Massachusetts........	1,944	11,628	2,150	14,000	1,514	9,650
New Jersey..........	118,446	772,213	116,832	782,644	107,946	755,215
Ohio, Virginia, and West Virginia......	177,048	1,568,756	193,289	1,781,053	192,134	1,776,717
Washington..........	(2/)	(2/)	6,682	33,783	(2/)	(2/)
Other States 3/......	144,151	1,156,523	138,940	1,206,330	90,847	822,026
Total..........	1/644,508	1/5,154,264	1/692,773	1/5,778,277	610,789	5,258,464

1/ Revised figure.
2/ Included with "Other States."
3/ California, Missouri, Oklahoma (1949), Pennsylvania, Texas (1948), Washington (1947 and 1949), and Wisconsin.

Abrasive Sands. - Considerable tonnages of natural sands with a high silica content are marketed for abrasive purposes, such as glass grinding, stone polishing, sand blasting or other abrasive purposes. Sales of these abrasive sands in 1949 totaled 1,080,886 short tons valued at $2,063,866 compared with 1,119,802 tons valued at $2,151,095 in 1948. The 1949 figures include 393,427 tons of blast sand valued at $1,222,513.

Pumice and Pumicite. - Output of pumice and pumicite (volcanic ash) in 1949 rose to 716,742 short tons, a record tonnage, and was 18 percent higher than in 1948. The total value declined in 1949 but was higher than in any year except 1948. Pumice is produced in the western States. Increasing quantities have been shipped into the Middle West and South as an aggregate for lightweight concrete, an outlet which has developed rapidly in recent years.

Pumice and pumicite sold or used by producers in the United States, 1947-49, by States

State	1947		1948		1949	
	Short tons	Value	Short tons	Value	Short tons	Value
California............	169,037	$1,026,275	196,934	$1,110,447	149,878	$799,602
Idaho.................	98,618	119,882	79,426	93,602	71,373	105,360
Montana...............	2,035	9,476	(1/)	(1/)	....	....
Nebraska..............	4,546	43,760	4,000	34,200	4,622	40,000
New Mexico............	85,639	512,176	177,630	812,545	351,368	1,026,479
Oregon................	33,240	111,380	106,277	307,274	104,475	273,427
Utah..................	7,500	30,000	7,618	30,472	(1/)	(1/)
Washington............	26,497	74,173	26,675	47,787	8,610	18,221
Other States 2/.......	15,440	94,758	9,186	65,579	26,416	105,993
Total.............	442,552	2,021,880	607,746	2,501,906	716,742	2,369,082

1/ Included with "Other States."
2/ Alaska (1948), Arizona (1949), Colorado (1947), Kansas, Montana (1948), Nevada (1949), Oklahoma, Texas, Utah (1949).

Pumice and pumicite sold or used by producers in the United States, 1947-49, by uses

Use	1947		1948		1949	
	Short tons	Value	Short tons	Value	Short tons	Value
Abrasive:						
Cleansing and scouring compounds & hand soaps	25,266	$323,885	16,005	$245,994	15,926	$188,823
Other abrasive uses ..	5,800	326,348	4,508	251,828	8,077	320,017
Acoustic plaster.......	5,427	163,360	3,612	109,498	10,018	182,990
Concrete admixture and concrete aggregate....	397,223	1,083,630	559,697	1,665,727	672,592	1,559,587
Other uses 1/..........	8,836	124,657	23,924	228,859	10,129	117,665
Total.............	442,552	2,021,880	607,746	2,501,906	716,742	2,369,082

1/ Insecticide, insulation, brick manufacture, filtration, solvents, plastics, paint filler, absorbents, and unspecified.

Corundum. - Although reported output of corundum in the Union of South Africa, by far the chief world source of supply, was only 3 percent less in 1949 than in 1948, imports for consumption in the United States decreased sharply, totaling only 2,013 short tons in 1949. As receipts were insufficient to meet commercial demand there was a shortage in this country throughout the year.

Emery. - Output of emery in 1949 decreased 9 percent in tonnage and 12 percent in value compared with 1948. A large part of the domestic output is used as a nonskid agent in concrete floors and steps. The balance is consumed in the manufacture of grinding wheels, abrasive sticks and similar products.

Artificial Abrasives. - Production of aluminum oxide and shipments of metallic abrasives in 1949 were substantially less than in 1948. Production of silicon carbide rose 7 percent in quantity to its second highest year (3 percent below the peak year 1943) and topped by 2 percent the previous record realization in 1943. The total for aluminum oxide in 1949 included 10,856 short tons, valued at $1,178,290, of "white high-purity or special" material.

Stocks of metallic abrasives at the end of 1949 increased 2 percent, those of aluminum oxide were 45 percent higher and stocks of silicon carbide more than quadrupled compared with those at the end of 1948. There was an 11 percent increase in average annual capacity for silicon carbide production, a small rise in capacity for aluminum oxide and a small decrease in metallic abrasives capacity.

Miscellaneous Mineral Abrasive Materials. - In addition to the natural and manufactured abrasive substances for which data are given herein, many other mineral materials are used for abrasive purposes, including various oxides and carbides, finely ground and calcined clays, lime, talc, ground feldspar, river silt, slate flour, and whiting.

Foreign Trade. - The total value of imports for consumption of both natural and artificial abrasives declined sharply in 1949 compared with 1948. Imports of diamond bort, carbonados and ballas, and diamond dust dropped sharply, as did corundum ore. Receipts of emery ore and crude pumice on the other hand were larger than in 1948. Silicon carbide and aluminum oxide imports were about one-quarter less in 1949. The value of exports of natural and artificial abrasives in 1949 rose 14 percent compared with 1948.

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MINERAL INDUSTRY SURVEYS
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FOR RELEASE SEPTEMBER 28, 1950.
MINERAL MARKET REPORT
MMS NO. 1916

RADIO-GRADE QUARTZ IN 1949

Although small quantities of quartz crystal suitable for frequency control use have been found in the United States, supplies from domestic sources are quite inadequate to supply the market. In 1949, as in the past, the bulk of the supply came from Brazil. Much smaller quantities were imported from Norway, France, India, China, and Hong Kong. Consumption of radio-grade quartz during the year continued to decline, according to reports by consumers to the Bureau of Mines, United States Department of the Interior. Much of the imported material reported in the following table is of optical and fusing grade and not of radio-grade. The excess of imports over consumption is attributable to material rejected after inspection by consumers, stocks, and purchases for the National Stockpile.

During the last war dangerous interruptions to the delivery of Brazilian quartz crystal for use in military communication equipment and later a serious concern over the possible lack of reserves of natural quartz caused a flurry of interest in substitutes. Soon afterward a program of investigation of possible substitutes for quartz and the synthesis of quartz, under the guidance of the Signal Corps, was underway. Since that time, significant progress has been made, and the commercial feasibility of quartz synthesis is being investigated.

Imports of uncut quartz crystal, consumption of radio-grade quartz, and production of piezoelectric units in the United States, 1945-49

Year	Imports of uncut quartz crystal 1/		Consumption of radio-grade quartz (pounds)	Production of piezoelectric units 2/ (number)
	Pounds	Value		
1945	1,329,798	$6,190,621	1,040,000	18,918,000
1946	370,556	2,376,598	172,400	1,744,100
1947	473,788	1,815,468	68,100	1,052,400
1948	3/ 1,238,820	3/ 4,209,531	61,600	1,225,400
1949	319,798	1,462,018	46,200	937,100

1/ Includes optical-grade quartz used in production of optical instruments.
2/ Includes oscillators, resonators, and other piezoelectric units.
3/ Revised figure.

Prepared by Joseph C. Arundale and F. M. Barsigian, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division. Interior - Duplicating Sec., Washington, D.C.

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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE OCTOBER 5, 1950.

MINERAL MARKET REPORT
MMS NO. 1917

DECREASED FELDSPAR OUTPUT IN 1949

Production of crude feldspar in 1949 declined 20 percent and sales of ground feldspar 24 percent compared with 1948 figures and were the lowest since 1944 and 1945, respectively, according to reports by producers to the Bureau of Mines, United States Department of the Interior. Total values decreased 11 percent for crude and 13 percent for ground feldspar. Factors contributing to this decline were the reduction in glass container shipments about the middle of the year, the general slackening of business activity, and competition from nepheline syenite, aplite, and to some extent blast-furnace slag. Later in the year, however, both crude and ground feldspar recovered appreciably and at the end of the year production was at a high level. Aplite production in 1949 also declined, but less sharply than feldspar. Imports of Canadian crude feldspar in 1949 dropped nearly 50 percent. Whereas imports of unground nepheline syenite were about one-quarter less than in 1948, receipts of ground nepheline syenite more than doubled in 1949.

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DOMESTIC PRODUCTION

Crude feldspar. - Production of crude feldspar in 1949 totaled 369,378 long tons valued at $2,278,441, a sizeable decrease in both quantity and value compared with 1948. The average value per ton rose 11 percent to $6.17. Feldspar in 1949 was mined in 13 States, compared with 12 in 1948, Texas again reporting a small output.

As in 1948, North Carolina was the largest producing State, furnishing 44 percent of the total output. Colorado supplied 17 percent of the total and Virginia and South Dakota each 9 percent. Production in Arizona, California, Connecticut, and Georgia was higher than in 1948. All other States in 1949 showed losses in tonnage compared with 1948, ranging from 2 or 3 percent for Colorado, Maine and Virginia to 20 percent for North Carolina.

Prepared by Robert W. Metcalf, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

Crude feldspar sold or used by producers in the United States,
1947-49, by States

State	1947		1948		1949	
	Long tons	Value	Long tons	Value	Long tons	Value
Colorado........	43,676	$218,593	62,497	$253,227	60,966	$341,049
Connecticut	15,408	100,152	12,110	78,772	12,659	95,044
Maine	16,898	97,565	18,774	130,486	18,286	130,275
North Carolina ..	220,997	1,081,514	201,774	1,116,825	160,916	973,431
South Dakota	58,959	284,378	54,037	270,889	32,272	156,548
Virginia	41,820	261,741	34,770	231,607	33,936	234,442
Wyoming	18,801	90,258	16,760	78,080	(1/)	(1/)
Undistributed 1/.	43,351	276,739	59,991	404,501	50,343	347,652
Total	459,910	2,410,940	460,713	2,564,387	369,378	2,278,441

1/ Included with "Undistributed."
2/ Includes Arizona, California, Georgia, Maryland (1947), New Hampshire, and New York and Texas (1947 and 1949), and Wyoming (1949).

Ground feldspar. - The output of ground feldspar by merchant mills in 1949 dropped 24 percent to 386,707 short tons. Ground feldspar was produced in 14 States in 1949 compared with 13 in 1948, California again reporting a small tonnage. All States except Georgia showed moderate to substantial declines in sales in 1949 as against 1948.

Ground feldspar sold by merchant mills 1/ in the United States,
1948-49, by States

State	1948			1949		
	Active mills	Short tons	Value	Active mills	Short tons	Value
Colorado	2	81,049	$825,476	2	69,294	$727,989
Connecticut	2	23,412	446,060	2	21,572	437,030
New Jersey	1			1		
Maine	3	20,789	347,492	3	16,742	295,227
North Carolina	4	219,720	2,377,030	4	159,768	2,203,604
Tennessee	2			1		
Undistributed 2/	14	161,481	2,466,173	14	119,331	1,945,251
Total	28	506,451	6,462,231	27	386,707	5,609,101

1/ Excludes potters and others who grind for consumption in their own plants.
2/ Includes (number of active mills in parentheses) Arizona (1), California (1 in 1949), Georgia (1 in 1948-49), Illinois (1), New Hampshire (3 in 1948-49), New York (3), South Dakota (3 in 1948, 2 in 1949), and Virginia (2).

CONSUMPTION AND USES

Crude feldspar. - Many of the merchant grinders mine their own feldspar, but a large part of the crude feldspar mined is obtained from small producers who sell their product principally to merchant mills. The quantity of feldspar and feldspathic rocks treated in flotation plants is growing. Some pottery and enamel manufacturers and soap (cleanser) makers purchase all or part of their requirements in crude form from domestic or Canadian miners and grind it to their own specifications in their own mills.

Ground feldspar. - The ceramic industries consumed 99 percent of the feldspar ground in merchant mills in 1949. Glass makers received 52 percent of total shipments; pottery manufacturers, 41 percent; enamel ware makers, 6 percent; and for other uses including soaps and abrasives, 1 percent. Shipments to glass and pottery factories declined sharply in 1949 but sales for enamel ware were slightly above the 1948 level.

Ground feldspar sold by merchant mills in the United States, 1947-49, by uses

USE	1947		1948		1949	
	Short tons	Percent of total	Short tons	Percent of total	Short tons	Percent of total
Ceramic:						
Glass	266,720	55.3	270,065	53.3	199,852	51.7
Pottery	183,829	38.1	202,905	40.1	158,218	40.9
Enamel	24,159	5.0	25,282	5.0	25,351	6.6
Other ceramic uses	60	----	--------	----	30	----
Soaps and abrasives	7,871	1.6	8,135	1.6	3,142	.8
Other uses	61	----	64	----	114	----
Total	482,700	100.0	506,451	100.0	386,707	100.0

In 1949 ground feldspar was shipped into at least 30 States and 5 foreign countries. The larger consuming areas, however, were confined to six States - Pennsylvania, Ohio, Illinois, New Jersey, West Virginia, and Indiana - totaling together 68 percent of all sales. All the important States except Oklahoma showed decreases in 1949 compared with 1948.

NEPHELINE SYENITE

Domestic nepheline syenite has not proved suitable for the manufacture of ceramic ware. Virtually all of the nepheline syenite used for ceramic purposes in this country has been imported from Canada and has originated from the mines of American Nepheline, Ltd., Lakefield, Ontario.

APLITE

By far the most of the "aplite" mined in 1949 was consumed in the manufacture of glass. Production in 1949 was somewhat less than in 1948. There were two producers of aplite in 1949 - Dominion Minerals, Inc., Piney River, Virginia, and Carolina Mineral Co., Inc., Kona, North Carolina. Deposits are in Amherst and Nelson Counties, Virginia, near Piney River.

Feldspar. - Imports of crude feldspar into the United States in 1949 dropped nearly 50 percent, falling to 15,826 long tons valued at $107,925, the lowest tonnage imported since 1945, and the smallest value since 1944. No imports of ground feldspar were reported in 1949.

According to reports by the merchant grinders to the Bureau of Mines, the tonnage of ground feldspar destined for export in 1949 totaled 4,228 short tons, compared with 1,434 tons in 1948. Foreign destinations in 1949 were Canada, Mexico, Peru, Belgium, and United Kingdom.

Nepheline Syenite. - Crude nepheline syenite imported into the United States in 1949 totaled 41,215 short tons compared with 53,570 tons in 1948. The quantity of ground nepheline syenite, however, rose from 7,577 tons in 1948 to 18,779 tons in 1949, indicating a shift in the form in which received, rather than in the quantity imported. This is attributed to the greater output of processed material from the new mill of American Nepheline, Ltd., at Lakefield, Ontario.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, **Secretary** JAMES BOYD, **Director**

FOR RELEASE OCTOBER 6, 1950.

MINERAL MARKET REPORT
MMS NO. 1918

DIMENSION STONE IN 1949

Dimension stone (exclusive of slate) sold or used by producers in the United States in 1949, as reported by the producers to the Bureau of Mines, United States Department of the Interior, totaled 1,618,430 short tons valued at $51,746,125 - a decrease of 3 percent in quantity but an increase of 8 percent in value compared with 1948. This total includes all dimension stone - blocks or slabs of natural stone most of which are cut or trimmed to definite shapes and sizes - sold or used for rough construction, cut stone, slabs, mill blocks, rubble, monumental purposes, paving blocks, curbing, and flagging.

The sales of dimension stone used as building stone amounted to 11,890,440 cubic feet valued at $29,910,439 - a decrease of 6 percent quantitywise but an increase of 20 percent in value. Rubble, also classed as a building stone but not included in the above total for dimension stone, increased 23 percent in quantity and 24 percent in value compared with 1948.

Memorial stone production, an important branch of the granite and marble industries, declined in 1949. Sales of stone for monumental purposes amounted to 3,125,300 cubic feet valued at $18,757,859 compared with 3,724,250 cubic feet valued at $20,541,071 in 1948.

Paving block sales showed percentage decreases of 30 and 17, respectively, in number and value.

Curbing sales amounted to 738,250 cubic feet valued at $1,689,043 - representing a decrease of 4 percent quantitywise but an increase of 22 percent in value compared with 1948, while sales of stone for flagging increased 7 percent in quantity and 11 percent in value.

The following tables present salient statistics of the dimension-stone industries in 1949.

Prepared by D. G. Runner and Nan C. Jensen, under the supervision of C. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

Dimension stone sold or used by producers in the United States, 1948-49, by kinds and uses

Kind and use	1948	1949	
		Total	Percent of change
Granite:			
Building stone:			
Rough construction short tons	136,630	55,080	-60
Value	$421,178	$316,755	-25
Average per ton	$3.08	$5.75	+87
Cut stone, slabs, and mill blocks cu. ft.	713,350	820,650	+15
Value	$3,913,426	$4,300,878	+10
Average per cubic foot	$5.49	$5.24	-5
Rubble short tons	109,660	85,660	-22
Value	$236,774	$204,498	-14
Monumental stone cubic feet	3,326,990	2,772,580	-17
Value	$16,458,601	$15,100,149	-8
Average per cubic foot	$4.95	$5.45	+10
Paving blocks number	392,110	275,570	-30
Value	$32,810	$27,384	-17
Curbing cubic feet	699,370	578,760	-17
Value	$1,259,932	$1,365,310	+8
Total:			
Quantity approximate short tons	639,180	485,860	-24
Value	$22,322,721	$21,314,974	-5
Basalt and related rocks (trap rock):			
Building stone:			
Rough construction short tons	3,340	28,100	+741
Value	$16,700	$92,669	+455
Average per ton	$5.00	$3.30	-34
Rubble short tons	54,890	7,270	-87
Value	$60,613	$5,030	-92
Total:			
Quantity short tons	58,230	35,370	-39
Value	$77,313	$97,699	+26
Marble:			
Building stone (cut stone, slabs, and mill blocks) cubic feet	576,500	844,740	+47
Value	$5,022,973	$7,494,892	+49
Average per cubic foot	$8.71	$8.87	+2
Monumental stone cubic feet	397,260	352,720	-11
Value	$4,082,470	$3,657,710	-10
Average value per cubic foot	$10.28	$10.37	+1
Total:			
Quantity approximate short tons	82,700	101,720	+23
Value	$9,105,443	$11,152,602	+22

Kind and use	1948	1949	
		Total	Percent of change
Limestone:			
Building stone:			
Rough construction...short tons	47,930	24,650	-49
Value	$202,819	$110,058	-46
Average per ton	$4.23	$4.46	+5
Cut stone, slabs, and mill blocks...cu. ft.	6,222,430	6,327,580	+2
Value	$10,103,934	$12,152,609	+20
Average per cubic foot	$1.62	$1.92	+19
Rubble...short tons	86,510	174,010	+101
Value	$184,917	$307,246	+66
Flagging...cubic feet	185,180	180,150	-3
Value	$91,196	$100,628	+10
Total:			
Quantity...approximate short tons	607,130	679,800	+12
Value	$10,582,866	$12,670,541	+20
Sandstone:			
Building stone:			
Rough construction...short tons	25,380	18,770	-26
Value	$130,434	$83,633	-36
Average per ton	$5.14	$4.46	-13
Cut stone, slabs, and mill blocks...cu. ft.	1,695,740	1,818,760	+7
Value	$3,357,853	$3,623,308	+8
Average per cubic foot	$1.98	$1.99	+1
Rubble...short tons	22,320	31,080	+39
Value	$80,026	$109,024	+36
Curbing...cubic feet	69,930	159,490	+128
Value	$122,346	$323,733	+165
Flagging...cubic feet	321,640	348,690	+8
Value	$477,165	$520,760	+9
Total:			
Quantity...approximate short tons	204,250	225,590	+10
Value	$4,167,824	$4,660,458	+12
Miscellaneous stone: 1/			
Building stone...cubic feet	910,030	555,320	-39
Value	$1,739,826	$1,735,637	......
Average per cubic foot	$1.91	$3.13	+64
Rubble...short tons	2,820	40,960	+1,352
Value	$11,383	$83,378	+632
Flagging...cubic feet	13,600	27,110	+99
Value	$16,743	$30,836	+84
Total:			
Quantity...approximate short tons	80,120	90,090	+12
Value	$1,767,952	$1,849,851	+5
Total dimension stone, excluding slate:			
Quantity...approximate short tons	1,671,610	1,618,430	-3
Value	$48,024,119	$51,746,125	+8
Slate as dimension stone, approximate short tons	140,530	131,990	-6
Value	$6,866,552	$6,399,716	-7
Total dimension stone, including slate:			
Quantity...approximate short tons	1,812,140	1,750,420	-3
Value	$54,890,671	$58,145,841	+6

1/ Includes soapstone, mica schist, volcanic rocks, argillite, and other varieties that cannot be classified in the principal groups.

Dimension stone sold or used by producers in the United States, 1948-49, by uses

Use	1948		1949	
	Quantity	Value	Quantity	Value
Building stone:				
Rough construction......short tons	1/213,280	1/$771,131	126,600	$603,115
Cut stone, slabs, and mill blocks 2/............cubic feet	1/10,118,050	1/24,138,012	10,367,050	29,307,324
Approx. equivalent in short tons	1/767,920	....	789,470	....
Rubble..................short tons	276,200	573,713	338,980	709,176
Monumental stone.........cubic feet	3,724,250	20,541,071	3,125,300	18,757,859
Approx. equivalent in short tons..	306,770	....	257,510	....
Paving blocks................number	392,110	32,810	275,570	27,384
Approx. equivalent in short tons..	3,210	....	1,960	....
Curbing..................cubic feet	769,300	1,382,278	738,250	1,689,043
Approx. equivalent in short tons..	62,950	....	59,420	....
Flagging.................cubic feet	520,420	585,104	555,950	652,224
Approx. equivalent in short tons..	41,280	....	44,490	....
Total dimension stone (quantities approximate, in short tons).....	1,671,610	48,024,119	1,618,430	51,746,125

1/ Revised figure. 2/ Dimension stone for refractory use is included with sawed building stone, which includes- 1948: 224,060 cu. ft. (16,360 short tons) of stone for refractory use valued at $465,528; 1949: 241,610 cu. ft. (17,615 tons), $524,666.

Building stone sold or used by producers in the United States in 1949, by kinds

Kind	Rough			
	Construction		Architectural	
	Cubic feet	Value	Cubic feet	Value
Granite..............................	663,470	$316,755	280,360	$510,221
Basalt...............................	327,660	92,669	....	....
Marble...............................	....	....	325,760	1,140,528
Limestone............................	293,420	110,058	2,292,240	2,235,315
Sandstone............................	238,840	83,633	703,440	908,612
Miscellaneous........................	....	....	....	....
Total............................	1,523,390	603,115	3,601,800	4,794,676

Kind	Finished				Total	
	Sawed		Cut			
	Cubic feet	Value	Cubic feet	Value	Cubic feet	Value
Granite 1/.......	322,300	$1,450,476	217,990	$2,340,181	1,484,120	$4,617,633
Basalt..........	....	....	....	....	327,660	92,669
Marble..........	134,680	891,713	384,300	5,462,651	844,740	7,494,892
Limestone........	2,669,840	3,716,444	1,365,500	6,200,850	6,621,000	12,262,667
Sandstone........	997,920	2,006,442	117,400	708,254	2,057,600	3,706,941
Miscellaneous....	2/555,320	2/1,735,637	....	....	555,320	1,735,637
Total.......	2/4,680,060	2/9,800,712	2,085,190	14,711,936	11,890,440	29,910,439

1/ Sawed stone corresponds to dressed stone for construction work (walls, foundations, bridges) and cut stone to architectural stone for high-class buildings.
2/ Rough and cut miscellaneous stone included with sawed stone.

Interior — Duplicating Section — Washington, D. C.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE OCTOBER 9, 1950.

MINERAL MARKET REPORT
MMS NO. 1919

ROOFING GRANULES IN 1949

The production of roofing granules in 1949, as reported by producers to the Bureau of Mines, United States Department of the Interior, amounted to 1,354,205 short tons valued at $19,978,574 - a decrease of 9 percent in quantity and 5 percent in value compared with 1948. The production of brick granules decreased 33 percent, natural 21 percent, and artificially colored 2 percent. Although the output of all types of granules decreased in 1949, the average value for natural increased 21 cents to $8.75, artificially colored 34 cents to $16.86 and brick 42 cents to $17.12. The average value for all types of granules in 1949 was $14.75 compared with $14.12 in 1948.

Production of roofing granules [1] in the United States, 1945-49

Year	Natural			Artificially colored		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
1945...	355,840	$2,628,052	$7.39	628,220	$9,124,891	$14.52
1946...	447,910	3,470,411	7.75	877,990	12,939,512	14.74
1947...	504,980	4,166,810	8.25	1,133,870	17,559,227	15.49
1948...	448,150	3,828,307	8.54	1,002,430	16,563,351	16.52
1949...	352,846	3,088,402	8.75	977,934	16,489,253	16.86

Year	Brick			Total		
	Short Tons	Value		Short tons	Value	
		Total	Average		Total	Average
1945...	61,220	$947,637	$15.48	1,045,280	$12,700,580	$12.15
1946...	54,660	866,174	15.85	1,380,560	17,276,097	12.51
1947...	56,570	998,434	17.65	1,695,420	22,724,471	13.40
1948...	35,110	586,173	16.70	1,485,690	20,977,831	14.12
1949...	23,425	400,919	17.12	1,354,205	19,978,574	14.75

[1] Manufactured from stone, slate, slag, and brick.

Prepared by D. G. Runner and Nan C. Jensen, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE OCTOBER 10, 1950.

MINERAL MARKET REPORT
MMS NO. 1920

CRUSHED AND BROKEN STONE IN 1949

The output of crushed and broken stone in the United States in 1949, as reported by producers to the Bureau of Mines, United States Department of the Interior, amounted to 222,408,140 short tons valued at $289,695,520 - a decrease of 1 percent in tonnage but an increase of 3 percent in value. Included in this total are stone sold or used for concrete aggregates, railroad ballast, metallurgical use (flux), agricultural limestone, refractory stone, riprap, in alkali, calcium carbide, sugar and glass factories, in paper mills, and in various other chemical and manufacturing processes. Stone used in the manufacture of open-market lime and cement, asphaltic stone, and slate used for granules and flour are not included in this total.

Crushed and broken stone used for concrete aggregates and railroad ballast (63 percent of the total output in 1949) increased 1 percent in quantity and 5 percent in value over 1948 totals. Eighty-nine percent of the 124,367,210 short tons used for concrete aggregate was produced by commercial operators and 11 percent by Government agencies.

Metallurgical uses, which took 14 percent of the total crushed and broken stone in 1949, showed a decrease of 13 percent quantitywise and a decrease of 7 percent in value compared with 1948. Limestone for agricultural purposes (10 percent of total tonnage of crushed stone in 1949) increased 3 and 4 percent, respectively, in quantity and value over the previous year's figures. Other uses consumed 29,165,540 tons (13 percent of total) valued at $50,835,269.

In 1949, limestone, including dolomite, constituted 73 percent of all crushed and broken stone sold (excluding that used for making cement and lime) and was quarried in all but four States.

The following tables present the salient statistics of the crushed and broken stone industries in 1949.

Prepared by D. G. Runner and Nan C. Jensen, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

Stone[1] sold or used by producers in the United States, 1948-49, by States

State	1948		1949	
	Short tons	Value	Short tons	Value
Alabama	2,475,530	$4,482,133	2,636,930	$6,039,867
Arizona	307,570	263,157	356,050	203,295
Arkansas	1,379,410	1,853,500	2/ 1,279,250	2/ 2,247,236
California	2/ 11,936,240	2/ 13,155,454	11,373,700	12,594,048
Colorado	2,195,250	2,490,449	2/ 1,816,790	2/ 2,803,538
Connecticut	1,525,490	2,283,298	1,695,650	2,460,547
Delaware	36,390	89,970	37,240	92,100
Florida	2/ 4,154,920	2/ 5,115,974	4,215,090	4,748,253
Georgia	3,631,430	10,801,355	2/ 4,156,220	2/ 8,427,627
Idaho	1,081,060	1,003,858	1,440,680	1,878,801
Illinois	2/ 18,533,290	2/ 22,823,138	17,054,110	20,682,162
Indiana	2/ 6,574,390	2/ 14,989,239	2/ 6,332,360	2/ 15,227,818
Iowa	6,387,620	8,332,682	6,831,190	8,663,201
Kansas	5,315,680	5,481,190	2/ 5,978,420	2/ 7,951,490
Kentucky	6,154,950	7,598,309	7,100,160	8,586,402
Louisiana	(3/)	(3/)	(3/)	(3/)
Maine	288,760	2,021,035	258,810	2,025,870
Maryland	1,874,270	3,115,196	2/ 1,789,830	2/3,036,410
Massachusetts	2/ 2,367,140	2/ 6,592,952	2,290,940	6,552,935
Michigan	2/ 19,704,150	2/ 14,620,527	16,546,670	13,387,334
Minnesota	1,804,960	5,090,652	1,878,910	5,278,716
Mississippi	24,330	27,980	(3/)	(3/)
Missouri	2/ 9,020,580	2/ 12,320,220	9,562,720	13,969,008
Montana	614,950	613,024	2/ 602,890	2/ 563,465
Nebraska	366,110	707,327	2/ 504,870	2/ 840,758
Nevada	554,850	680,957	518,510	668,960
New Hampshire	88,430	314,353	6,910	381,141
New Jersey	3,591,440	6,375,877	4,070,790	7,896,619
New Mexico	531,300	293,858	138,290	106,135
New York	12,687,970	17,261,486	13,022,070	18,160,387
North Carolina	5,237,050	7,713,859	6,225,290	10,077,976
North Dakota	(3/)	(3/)	(3/)	(3/)
Ohio	20,274,570	27,552,017	2/ 19,364,230	2/ 27,419,158
Oklahoma	4,027,630	4,141,379	4,341,930	4,027,409
Oregon	3,682,420	5,733,658	2/ 4,397,390	2/ 6,479,164
Pennsylvania	23,172,190	35,189,148	21,226,480	34,855,664
Rhode Island	107,080	536,651	2/ 74,670	2/ 451,029
South Carolina	2,443,750	4,543,436	2/ 2,440,540	2/ 3,628,596
South Dakota	763,080	3,911,236	2/ 1,023,710	2/ 4,473,432
Tennessee	8,011,360	12,932,537	2/ 7,613,530	2/ 13,026,948
Texas	2/ 3,844,350	2/ 4,658,720	4,158,430	5,289,647
Utah	279,660	477,654	283,020	427,418
Vermont	395,380	7,992,144	441,770	8,276,287
Virginia	7,366,520	12,157,241	7,509,740	12,442,765
Washington	5,229,500	6,382,462	2/ 3,688,890	2/ 4,105,516
West Virginia	4,929,910	5,802,683	4,854,590	6,960,191
Wisconsin	2/ 7,224,330	2/ 12,581,046	7,326,710	13,636,020
Wyoming	964,460	1,265,694	1,802,580	2,227,096
Alaska, Hawaii, and Puerto Rico	1,060,490	2,324,349	1,477,820	1,999,329
Undistributed	1,313,170	2,259,507	2,279,200	6,163,877
Total	225,535,390	328,984,571	224,026,570	341,441,645

See footnotes on following page.

1/ Includes-1948: 1,671,510 short tons of dimension stone valued at $48,024,119; 1949: 1,618,430 tons, $51,746,125.

2/ To avoid disclosing confidential information, certain State totals are incomplete, the figures not included being combined with "Undistributed."

3/ Included with "Undistributed."

Crushed and broken stone sold or used by producers in the United States, 1948-49, by principal uses

Use	1948			1949		
	Short tons	Value		Short tons	Value	
		Total	Average		Total	Average
Concrete & road metal	121,542,170	$149,879,694	$1.23	124,367,210	$158,357,911	$1.27
Railroad ballast.....	18,180,990	16,315,834	.90	17,054,180	15,376,880	.90
Furnace flux 1/......	34,901,940	34,250,008	.98	30,338,300	31,874,319	1.05
Alkali works.........	7,349,540	5,942,572	.81	6,022,240	5,641,705	.94
Riprap...............	5,707,410	7,553,156	1.32	7,568,390	9,829,626	1.30
Agriculture 1/.......	20,941,530	32,034,698	1.53	21,482,910	33,251,141	1.55
Refractory stone 2/..	2,557,050	6,531,084	2.55	2,386,350	6,327,048	2.65
Asphalt filler.......	553,360	1,593,820	2.88	671,560	1,893,964	2.82
Calcium carbide works	1,052,080	1,027,952	.98	652,950	654,470	1.00
Sugar factories......	471,030	1,098,933	2.33	555,030	1,361,169	2.45
Glass factories......	666,360	1,410,120	2.12	621,840	1,373,314	2.21
Paper mills..........	475,880	908,091	1.91	417,850	766,856	1.84
Other uses...........	9,464,440	22,414,483	2.37	10,269,330	22,987,117	2.24
Total..........	223,863,780	280,960,452	1.26	222,408,140	289,695,520	1.30
Portland and natural cement and cement rock 3/............	54,513,000	(4/)	.....	55,219,000	(4/)	.....
Lime 5/..............	14,528,000	(4/)	.....	12,637,000	(4/)	.....
Grand total.....	292,905,000	(4/)	.....	290,264,000	(4/)	.....

1/ Limestone.

2/ Ganister (sandstone), mica schist, dolomite, and soapstone.

3/ Value reported as cement in chapter on Cement.

4/ No value available for stone used in manufacture of cement and lime.

5/ Value reported as lime in chapter on Lime.

Crushed stone sold or used in the United States in 1949, by methods of transportation

Method of transportation	Commercial operations		Commercial and noncommercial 1/ operations	
	Short tons	Percent of total	Short tons	Percent of total
Truck....................	101,656,200	50	120,453,760	54
Rail.....................	71,640,310	35	71,640,310	32
Waterway.................	21,419,240	11	21,419,240	10
Unspecified..............	8,894,830	4	8,894,830	4
	203,610,580	100	222,408,140	100

1/ Entire output of noncommercial operations assumed to be moved by truck.

Limestone (crushed and broken stone) sold or used by producers in the United States, 1948-49, by uses

Use	1948		1949	
	Short tons	Value	Short tons	Value
Riprap	2,582,300	$3,317,663	2,806,230	$3,503,812
Fluxing stone	34,901,940	34,250,008	30,338,300	31,874,319
Concrete and road metal	82,414,650	99,956,803	85,154,830	106,541,810
Railroad ballast	7,767,130	7,832,978	7,023,280	7,043,095
Agriculture	20,941,530	32,034,698	21,482,910	33,251,141
Alkali works	7,349,540	5,942,572	6,022,240	5,641,705
Calcium carbide works	1,052,080	1,027,952	652,950	654,470
Coal-mine dusting	414,910	1,640,476	284,840	1,130,061
Filler (not whiting substitute):				
Asphalt	553,360	1,593,820	671,560	1,893,964
Fertilizer	612,040	1,155,690	666,260	1,361,999
Other	262,680	841,406	257,540	974,509
Filter beds	19,940	38,985	56,020	100,741
Glass factories	666,360	1,410,120	621,840	1,373,314
Limestone sand	1,033,820	954,544	1,241,340	1,196,921
Limestone whiting 1/	537,230	3,590,757	501,400	3,511,159
Magnesia works (dolomite) 2/	229,200	315,680	241,070	428,723
Mineral food	422,850	1,843,910	413,850	1,837,105
Mineral (rock) wool	40,540	47,053	42,600	50,737
Paper mills	475,880	908,098	417,850	766,856
Poultry grit	72,040	653,087	101,980	904,053
Refractory (dolomite)	1,323,090	1,497,285	1,365,700	1,485,004
Road base	272,640	229,054	934,720	710,369
Stucco, terrazzo, and artificial stone	36,520	381,282	47,670	505,268
Sugar factories	471,030	1,098,933	555,030	1,361,169
Other uses 3/	1,164,220	1,642,181	589,290	926,608
Use unspecified	517,740	663,115	575,160	813,559
Total	166,135,260	204,868,150	163,066,460	209,842,471

1/ Includes stone for filler for calcimine, caulking compounds, ceramics, chewing gum, explosives, floor coverings, foundry compounds, glue, grease, insecticides, leather goods, paint, paper, phonograph records, picture-frame moldings, plastics, pottery, putty, roofing, rubber, tooth paste, wire coating, and unspecified uses. Excludes limestone whiting made by companies from purchased stone.

2/ Includes stone for refractory magnesia.

3/ Includes stone for acid neutralization, athletic-field marking, carbon dioxide, chemicals (unspecified), concrete blocks and pipes, dyes, fill material, light bulbs, motion-picture snow, oil-well drilling, patching plaster, rayons, roofing granules, spalls, and water treatment.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary　　　JAMES BOYD, Director

FOR RELEASE　OCTOBER 12, 1950.

MINERAL MARKET REPORT
MMS NO. 1921

CLAY PRODUCTION AND USES - 1949 SUMMARY

Total clay production decreased 7 percent in 1949, compared with 1948, according to reports by producers to the Bureau of Mines, United States Department of the Interior.

Although most of the uses of clays showed declines in tonnage, several registered gains over 1948. Among those showing increases were linoleum 5 percent; enameling 6; portland and other hydraulic cements 4; and rubber 17 percent. Refractories decreased 20 percent; pottery 17, paper filler and coating 13, rotary drilling mud 10, filtering and decolorizing oils 7, and heavy clay products 6 percent.

Sales of kaolin and ball clay declined 10 and 17 percent, respectively, in 1949 compared with 1948. Kaolin was consumed chiefly in four fields - paper (54 percent of the total sales), rubber (14), pottery (9) and refractories (9). Decreases in kaolin consumption in 1949 compared with 1948 were reported for high-grade tile (24 percent), whitewares and refractories (17 each), and paper (13); consumption in rubber increased 12 percent. Ball clay was used chiefly in whiteware (78 percent of the total sales), and high-grade tile (11 percent). Use of ball clay in whiteware declined 20 percent, but high-grade tile and enameling requirements were larger.

After 11 years of constantly increasing output, the production of bentonite decreased 6 percent in 1949 compared with 1948, the peak year. Use as foundry sand bond fell off sharply, and rotary drilling mud showed a moderate decrease; filtering and decolorizing uses were 5 percent greater than in 1948.

Output of fuller's earth decreased 6 percent in 1949. The chief uses of fuller's earth were for filtering and decolorizing of oils, as an absorbent for oily or greasy floors, in insecticides and as rotary drilling mud. Use in filtering and decolorizing declined substantially but the quantities consumed in insecticides and rotary drilling mud were larger than in 1948.

Due to the reduction in demand for refractories, output of fire clay in 1949 declined 13 percent from the peak year 1948. Consumption of fire clay for all refractory purposes decreased 20 percent and for firebrick and block 21 percent. Several of the smaller refractory and non-refractory uses however, were larger in 1949 than in 1948. These included rubber, linoleum, and glass refractories. Fire clay consumed in heavy clay products was only 1 percent less than in 1948.

Prepared by R. W. Metcalf and A. M. Linn, under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

The following tables present salient statistics of clay production and use in the United States for the year 1949.

Salient statistics of the clay industry in the United States, 1948-49

	1948		1949	
	Short tons	Value	Short tons	Value
Domestic clay sold or used by producers:				
Kaolin or china clay	1,568,848	$19,756,738	1,415,537	$19,007,547
Ball clay	298,979	3,342,647	248,883	3,064,439
Fire clay, including stoneware clay	9,849,914	29,424,034	8,571,844	25,358,503
Bentonite	921,560	7,136,308	867,243	6,938,752
Fuller's earth	342,081	5,273,851	320,906	5,199,642
Miscellaneous clays	24,746,599	20,414,694	23,725,565	19,622,568
Total	37,727,981	85,348,272	35,149,978	79,191,451
Imports:				
Kaolin or china clay	99,930	1,650,102	77,226	1,156,803
Common blue and Gross Almerode	32,195	460,422	24,123	299,450
Fuller's earth	129	2,092	389	7,859
Other clay	3,687	29,454	3,367	17,287
Total imports...	135,941	2,142,070	105,105	1,481,399
Exports:				
Kaolin or china clay	19,074	319,294	21,839	362,615
Fire clay	102,482	935,232	80,736	766,195
Other clay (including fuller's earth)	1/145,293	1/3,883,610	142,308	3,666,775
Total exports ..	266,849	5,138,136	244,883	4,795,585

1/ Revised.

Clay sold or used by producers in the United States in 1949, by kinds and uses, in short tons

Use	Kaolin	Ball clay	Fire clay and stoneware clay	Bentonite	Fuller's earth	Misc. clay including slip clay	Total
Pottery and stoneware:							
Whiteware, etc.	118,456	194,177	....	....	....	....	312,633
Stoneware, including chemical stoneware	....	520	36,773	....	....	....	37,293
Art pottery and flower pots	3,232	5,245	26,544	....	....	12,404	47,425
Slip for glazing	640	200	....	....	....	511	1,351
Total	122,328	200,142	63,317	....	....	12,915	398,702
Tile, high-grade	22,233	27,349	118,199	....	....	404	168,185
Kiln furniture:							
Saggers, pins, stilts	5,584	636	16,223	....	....	....	22,443
Wads	....	....	1,752	....	....	....	1,752
Total	5,584	636	17,975	....	....	....	24,195
Architectural terra cotta	....	1,270	9,400	....	....	6,000	16,670
Paper:							
Filler	385,500	300	....	....	....	....	385,800
Coating	376,755	....	....	....	....	....	376,755
Total	762,255	300	....	....	....	....	762,555
Rubber	197,341	....	27,148	....	....	2,338	226,827
Linoleum	26,650	....	8,933	....	....	....	35,583
Paints:							
Filler or extender	12,294	....	....	....	....	....	12,294
Calcimine	1,085	....	897	....	....	....	1,982
Total	13,379	....	897	....	....	....	14,276
Portland and other hydraulic cements	54,749	....	3,166	35	....	6,618,184	6,676,134

(continued)

Clay sold or used by producers in the United States in 1949, by kinds and uses, in short tons (cont.):

Use	Kaolin	Ball clay	Fire clay and stoneware clay	Bentonite	Fuller's earth	Miscellaneous clay including slip clay	Total
Refractories:							
Firebrick and block	71,326	11,325	3,754,420	......	......	......	3,837,071
Bauxite, high-alumina brick	......	......	60,984	......	......	......	60,984
Fire-clay mortar, including clay processed for laying firebrick ..	41,382	......	255,683	......	......	......	297,065
Clay crucibles	463	25	558	......	......	......	1,046
Glass refractories	2,332	25	4,701	......	......	......	7,058
Zinc retorts and condensers	......	......	33,976	......	......	......	33,976
Foundries and steelworks	4,683	228	654,197	178,867	......	23,310	861,285
Other refractories	630	......	46,580	......	......	218	47,428
Total	120,816	11,603	4,811,099	178,867	......	23,528	5,145,913
Heavy clay products	5,082	......	3,430,723	......	......	16,474,893	19,910,698
Miscellaneous:							
Rotary drilling mud	......	......	1,051	313,083	30,411	146,789	491,334
Filtering and decolorizing oils. (raw and activated earths)	......	......	......	303,797	1/171,159	......	474,956
Other filtering and clarifying ...	9,647	......	......	2,712	3,659	......	16,018
Artificial abrasives	7,129	......	179	......	......	......	7,308
Absorbent uses (oily floors, etc.)	3,313	......	......	......	69,070	......	72,383
Asbestos products	2,857	......	539	......	......	......	3,396
Chemicals	16,853	......	75,346	947	......	......	93,146
Enameling	2,240	1,580	30	......	......	......	3,850
Fertilizers	12,979	......	......	......	......	600	13,579
Filler (other than paper or paint)	3	6,000	......	......	......	2,614	8,617
Insecticides and fungicides	14,956	......	......	3,656	37,342	265	56,219
Plaster and plaster products	4,800	......	2	......	......	......	4,802
Concrete admixture, sealing dams, etc.	......	......	......	1,196	......	......	1,196
Other uses	10,343	3	3,840	62,950	9,265	437,035	523,436
Total	85,120	7,583	80,987	688,341	320,906	587,303	1,770,240
Grand total: 1949:	1,415,537	248,883	8,571,844	867,243	320,906	23,725,565	35,149,978
1948:	1,568,848	298,979	9,849,914	921,560	342,081	24,746,599	37,727,981

1/ Comprises the following: Mineral oils, 151,353 tons; vegetable oils, 19,806 tons.

Interior - Duplicating Section, Washington, D. C.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman, Secretary
JAMES BOYD, Director

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FOR RELEASE October 11,1950

MINERAL MARKET REPORT, NO. MMS 1922

SURVEY OF FUEL CONSUMPTION AT REFINERIES IN 1949 [1]

By J. G. Kirby [2]

Increasing for the first time in the past four years, the average fuel requirement per barrel of crude run in 1949 was 687,000 B.t.u., or 49,000 B.t.u. per barrel more than in 1948. While a decrease in crude runs to stills, tends to increase the average fuel requirements per barrel, the change in 1949 appears to be due primarily to higher percentage yields of gasoline at the refineries rather than less efficiency caused by a partial curtailment of some refinery operations.

Refinery gas supplied 41 percent of the total heat requirements of the petroleum refineries in 1949; natural gas, the second ranking fuel supplied 33 percent. Increased quantities of fuel oil and petroleum coke were used during the year but less coal and acid sludge were consumed in petroleum refining.

REFINERY FUELS

FUEL OIL. - The increased use of fuel oil in a majority of the refinery districts in the face of reduced refinery runs doubtless reflects the influence of plentiful supplies and low market prices relative to 1948. Most of the 16 percent increase in the use of fuel oil as a refinery fuel during 1949 was reported by refineries in the California district that consumed 7,461,000 barrels, or more than double the amount used in 1948.

The East Coast and Indiana-Illinois refinery district were the principal users of fuel oil as a refinery fuel; however, the East Coast district showed a slight decline over the previous year, using 15,288,000 barrels or 4 percent less than in 1948. Refineries in the Indiana-Illinois district used 13,193,000 barrels --a 14 percent increase over the previous year. The Applachian, Texas Gulf Coast and Texas Inland district reported slight decreases, while the fuel oil used in the remaining district increased.

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[1] The Bureau of Mines will welcome reprinting of this paper, provided the following footnote acknowledgment is used: "Reprinted from Bureau of Mines' Mineral Market Report, No. MMS 1922."

[2] Commodity Specialist, Petroleum and Natural Gas Branch, Fuels and Explosives Division, Bureau of Mines

Interior-Duplication Section,Washington,D.C.

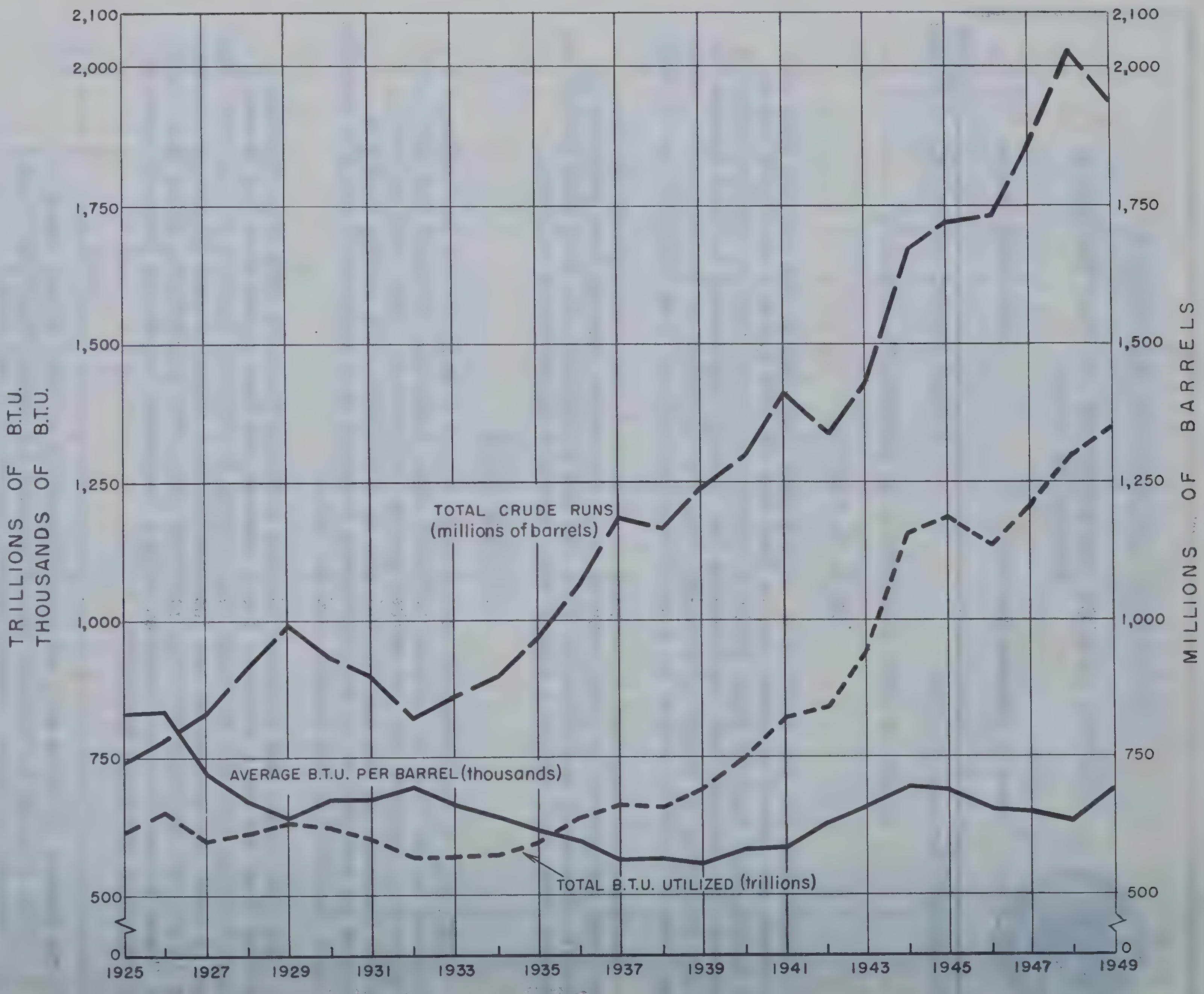

Fig.1.- Total crude run, total B.t.u. used, average B.t.u. consumed per barrel, 1925-49.

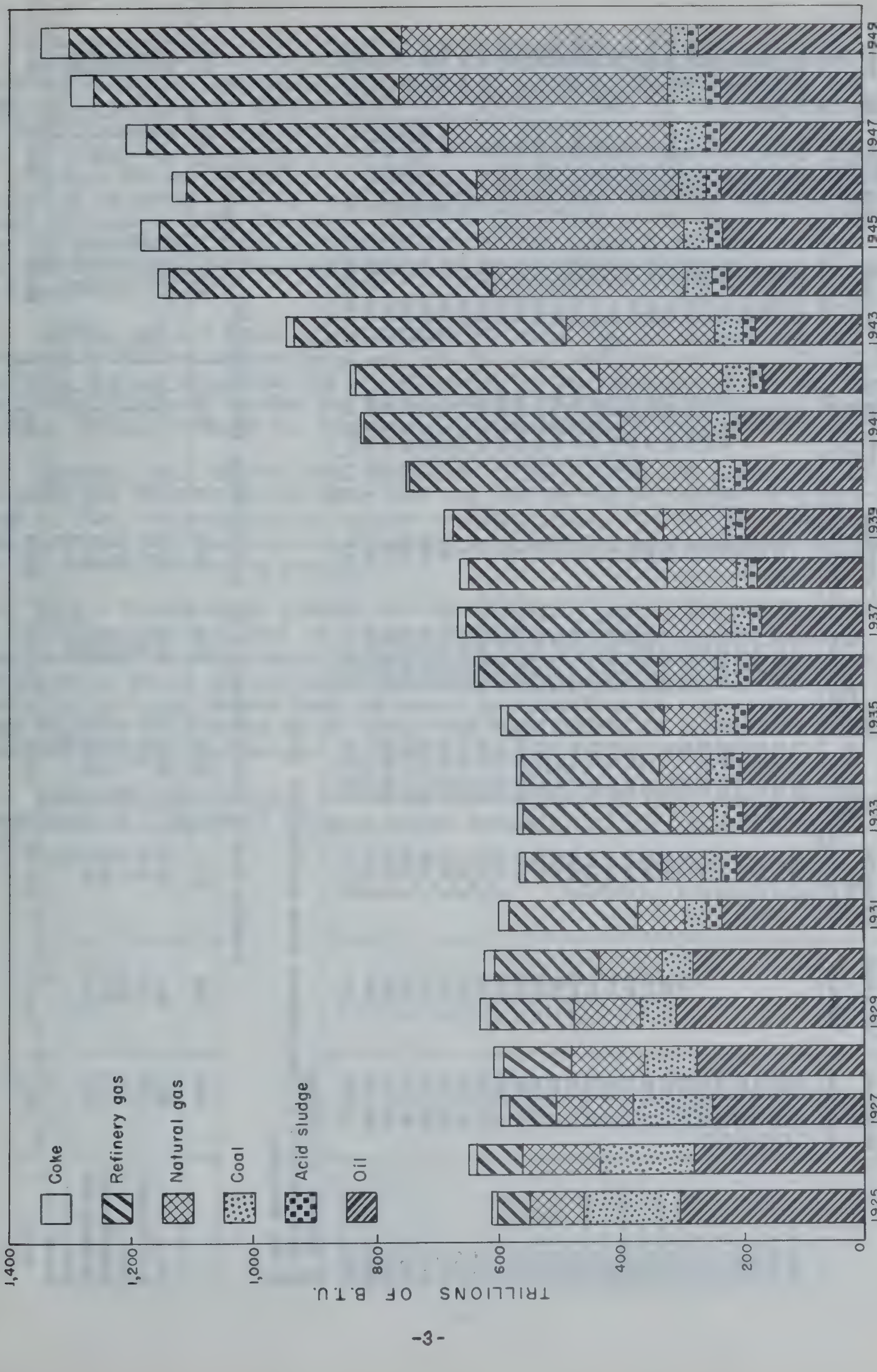

Fig.2.– B.t.u. equivalents of the various fuels used at refineries, 1925-49.

Summary of refinery fuels used by years, 1925 - 1949

	Oil thousands of barrels	Acid sludge thousands of barrels	Coal thousands of short tons	Gas Millions of cubic feet		Coke thousands of short tons	Purchased electricity thousands of kw.-hrs.	Total B.t.u. billions (approx.) 1/	Crude runs to stills thousands of barrels	B.t.u. per barrel of crude run
				Natural	Refinery					
1925.........	1/50,455		6,153	87,842	35,041	314	3/	613,480	739,920	829,000
1926.........	1/46,416		6,052	121,449	52,077	408	3/	648,519	779,264	832,000
1927.........	1/41,462		5,031	123,395	53,465	450	3/	597,497	828,835	721,000
1928.........	1/46,400		3,362	114,950	77,313	470	3/	609,216	913,295	667,000
1929.........	1/51,544		2,300	103,729	98,727	488	573,463	630,837	987,708	639,000
1930.........	1/46,956		1,949	98,842	121,321	580	826,640	623,443	927,447	672,000
1931.........	38,913	5,743	1,412	75,548	149,924	529	917,923	601,122	894,608	672,000
1932.........	34,801	5,924	958	67,467	161,634	333	845,816	567,490	819,997	692,000
1933.........	33,292	4,990	1,069	66,333	172,085	263	900,468	568,460	861,254	660,000
1934.........	33,163	4,702	1,189	79,965	164,741	194	1,022,984	571,470	895,636	638,000
1935.........	31,497	5,178	1,221	80,175	183,383	117	1,071,841	2/ 594,231	966,243	615,000
1936.........	30,454	4,937	1,310	93,183	210,689	123	1,191,023	638,149	1,068,570	597,000
1937.........	27,849	4,750	1,209	113,005	224,698	84	1,310,589	663,866	1,183,440	562,000
1938.........	28,855	3,467	722	109,741	233,791	75	1,400,499	660,956	1,165,015	567,000
1939.........	31,756	4,009	742	97,685	246,188	123	1,565,254	687,442	1,237,840	555,000
1940.........	32,085	4,428	979	128,007	252,914	113	1,679,092	748,692	1,294,162	579,000
1941.........	33,105	4,517	1,091	148,127	283,021	73	1,862,996	823,320	1,409,192	584,000
1942.........	27,763	4,594	1,706	201,670	265,743	53	2,041,587	839,712	1,334,103	629,000
1943.........	29,011	4,614	1,831	243,584	296,518	114	2,431,187	942,186	1,429,738	659,000
1944.........	36,574	5,550	1,771	315,311	351,123	382	3,048,124	1,152,580	1,665,684	692,000
1945.........	38,557	5,222	1,532	338,458	348,736	596	3,168,395	1,182,736	1,719,534	688,000
1946.........	38,318	5,230	1,718	331,520	318,172	522	2,867,544	1,130,677	1,730,197	653,000
1947.........	38,717	5,824	2,273	363,892	324,737	721	2,957,805	1,198,579	1,852,246	647,000
1948.........	38,653	5,780	2,449	441,470	331,156	925	2,971,068	1,295,099	2,030,670	638,000
1949.........	44,888	4,326	1,011	422,357	361,671	1,208	3,177,410	1,336,908	1,945,519	687,000

1/ Includes acid sludge.
2/ Includes b.t.u.'s from purchased steam starting with 1935.
3/ Not available.

Relative rank of various refinery fuels on a percentage basis, 1940-1949

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
Oil.........	25.7	24.1	19.9	18.5	19.0	19.6	20.3	19.4	17.9	19.5
Acid sludge..	2.6	2.5	2.4	2.2	2.2	2.0	2.1	2.2	2.0	1.4
Coal.........	3.4	3.4	5.3	5.1	4.0	3.4	4.0	4.9	4.9	2.0
Natural Gas..	17.1	18.0	24.0	25.8	27.4	28.6	29.3	30.4	34.1	33.2
Refinery Gas.	50.7	51.6	47.5	47.2	45.7	44.2	42.2	40.6	38.4	40.6
Coke.........	.5	.4	.2	.4	1.0	1.5	1.4	1.8	2.1	2.7
Steam........			.7	.8	.7	.7	.7	.7	.6	.6
Total......	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

ACID SLUDGE.- With the exception of the Appalachian and the Gulf Coast refinery districts, the use of acid sludge as a source of heat energy by the refineries declined in all districts to 4,326,000 barrels in 1949 compared with 5,780,000 barrels in 1948 or a decrease of 25 percent.

COAL.- The use of coal as a source of heat energy by petroleum refineries decreased 59 percent in 1949 only 1,011,000 short tons were used compared with 2,449,000 tons in 1948. The three districts using coal in the order of volume are the Appalachian, Indiana-Illinois and the East Coast. Coal supplied 2.0 percent of the Btu heating requirements of the refineries in 1949 compared with 4.9 percent in 1948.

NATURAL GAS.- A total of 422,357,000,000 cubic feet of natural gas was consumed by the refineries for plant fuel in 1949, compared with 441,470,000,000 in 1948. The use of natural gas at refineries in the Indiana-Illinois and Texas Gulf Coast districts doubled for the year while the California district showed a sharp decline. Changes for the other district during the year were slight.

REFINERY GAS.- Of the total production of 369,502,505,000 cubic feet of refinery gas 361,670,000,000 cubic feet was used by the refineries as a refining fuel in 1949, representing the largest recorded volume of this gas to be utilized. The Louisiana Gulf Coast district was the only refining area showing a decline in the amount of refinery gas used.

COKE.- Increasing 31 percent over the preceding year, 1,208,000 short tons of petroleum coke were used by refineries in 1949. Included in this total is some coke that accumulates on the catalyst in catalytic cracking units and is subsequently burned off. Although such coke is the source of a significant amount of refining process heat, it cannot be classified as a marketable product. Coke supplied 2.7 percent of the total heat requirements of the refineries in 1949 compared with 2.1 percent in 1948.

PURCHASED ELECTRICITY.- Increasing 7 percent during 1949, purchased electric power used as a source of refinery energy amounted to 3,177,410,000 kilowatt hours.

Fuel consumption at refineries in the United States, 1948 - 1949, by districts

District	Oil thousands of barrels	Acid sludge thousands of barrels	Coal thousands of short tons	Gas Millions of cu. ft.		Coke thousands of short tons	Purchased electricity thousands of kw.-hrs.	Total B.t.u. billions (approx.) [1]	Crude runs to stills thousands of barrels	B.t.u. per barrel of crude run
				Natural	Refinery					
1948										
East Coast......................	15,990	892	121	-	36,352	119	506,545	161,383	317,257	509,000
Appalachian.....................	2,142	50	1,322	2,289	8,309	43	178,179	63,779	57,637	1,107,000
Indiana, Illinois, Kentucky, etc..	11,562	518	1,006	2,175	65,192	301	414,079	206,864	332,233	623,000
Oklahoma, Kansas, Missouri, etc..	2,933	1,508	-	42,839	24,929	26	314,340	105,396	165,249	638,000
Texas Inland....................	348	112	-	39,245	12,892	-	197,082	61,175	89,909	680,000
Texas Gulf Coast................	99	1,691	-	194,773	91,218	255	267,549	347,459	509,587	682,000
Louisiana Gulf Coast............	82	226	-	64,778	27,559	181	248,596	113,056	159,223	710,000
Arkansas, Louisiana Inland, etc..	70	29	-	11,877	2,740	-	32,628	16,537	29,759	556,000
Rocky Mountain..................	2,204	147	-	9,871	9,614	-	71,901	38,179	59,631	640,000
California......................	3,223	607	-	73,623	52,351	-	740,169	181,271	310,185	584,000
Total U.S.A.................	38,653	5,780	2,449	441,470	331,156	925	2,971,068	1,295,099	2,030,670	638,000
Total B.t.u. (billions approx.)..	231,918	26,010	63,674	441,470	496,734	[1] 35,293	-	1,295,099	-	-
1949										
East Coast......................	15,288	764	4	-	[2] 40,623	167	503,728	158,301	280,357	565,000
Appalachian.....................	1,902	64	609	2,364	10,359	48	206,450	46,893	56,551	829,000
Indiana, Illinois, Kentucky, etc.	13,193	424	398	4,438	[3] 71,902	[4] 391	407,322	213,102	333,954	638,000
Oklahoma, Kansas, Missouri, etc..	3,627	700	-	37,982	27,346	67	286,344	107,105	155,216	690,000
Texas Inland....................	286	74	-	37,004	16,564	-	204,260	65,692	79,281	829,000
Texas Gulf Coast................	80	1,738	-	197,951	98,289	297	277,617	372,517	469,402	794,000
Louisiana Gulf Coast............	83	193	-	74,158	26,100	210	284,309	124,691	157,768	790,000
Arkansas, Louisiana Inland, etc..	73	28	-	12,441	2,909	-	33,496	17,975	27,417	656,000
Rocky Mountain..................	2,895	109	-	8,492	11,083	28	127,233	43,665	64,660	675,000
California......................	7,461	232	-	47,527	56,496	-	846,651	186,967	320,913	583,000
Total U.S.A.................	44,888	4,326	1,011	422,357	361,671	1,208	3,177,410	1,336,908	1,945,519	687,000
Total B.t.u. (billions approx.)..	260,350	19,467	26,286	443,475	542,507	44,823	-	1,336,908	-	-

[1] Includes purchased steam.
[2] Includes 66,500 M cubic feet of butane.
[3] Includes 42,468 M cubic feet liquefied gases.
[4] Includes 133,245 tons of catalytic cracking coke burned off the catalyst.

Note: The following factors, taken from the Bureau of Mines Standard Average Heating Values of Various Fuels, adopted January 3, 1950, were used in arriving at the B.t.u. equivalents of the various fuels used by the refineries in 1949: Oil - 5,800,000 b.t.u. per barrel; Acid Sludge - 4,500,000 b.t.u. per barrel; Coal - 26,000,000 b.t.u. per short ton; Natural Gas - 1,050 b.t.u. per cubic foot; Refinery Gas - 1,500 b.t.u. per cubic foot; Coke - 30,120,000 b.t.u. per short ton; and Purchased Steam - 1,200 b.t.u. per pound.

Fuel consumed at refineries in the United States, 1944 - 1949, by states

	Oil (Thousands of barrels)						Acid Sludge (Thousands of barrels)						Coal (Thousands of short tons)						Coke (Thousands of short tons)					
	1944	1945	1946	1947	1948	1949	1944	1945	1946	1947	1948	1949	1944	1945	1946	1947	1948	1949	1944	1945	1946	1947	1948	1949
Arkansas.............	38	37	26	7	10	9	-	-	-	35	29	28	-	-	-	-	-	-	-	-	-	-	-	-
California.1/.........	7,022	6,938	6,675	5,860	3,223	7,461	1,005	855	755	820	607	232	-	-	-	-	-	-	-	-	-	-	-	-
Colorado..............	197	191	158	100	181	181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Delaware 2/...........	748	902	910	1,040	1,013	930	-	-	5	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Georgia 3/............	146	166	184	197	195	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Illinois..............	3,525	3,619	4,210	3,891	3,566	4,434	239	181	111	130	152	120	426	390	312	459	582	209	141	214	116	110	169	183
Indiana...............	3,378	3,549	3,758	3,804	4,603	5,304	288	261	228	330	316	293	425	372	191	383	386	136	13	12	15	14	132	192
Kansas................	1,674	1,353	1,110	1,325	1,410	1,945	513	693	667	725	676	325	-	-	-	-	-	-	-	-	-	-	-	-
Kentucky 4/...........	525	436	498	530	568	541	-	-	-	-	-	-	18	16	15	19	19	30	-	-	-	-	-	-
Louisiana.............	196	196	260	237	85	85	281	267	212	233	226	193	-	-	-	-	-	-	145	148	159	174	181	210
Maryland..............	744	872	480	492	603	561	91	50	27	37	59	47	-	-	-	-	-	-	57	61	62	70	78	81
Michigan..............	1,111	1,201	1,143	1,089	1,063	874	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minnesota 5/..........	63	66	114	102	136	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mississippi 6/........	4	4	4	1	58	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Missouri 7/...........	395	332	268	380	571	442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	26	67
Montana...............	201	203	145	186	204	294	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
New Jersey............	4,375	5,550	5,582	6,108	6,585	6,596	618	450	731	831	711	609	123	58	11	64	121	4	1	35	18	40	36	82
New Mexico............	86	79	74	54	46	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New York..............	1,179	1,285	1,440	1,821	1,795	1,625	5	5	11	11	9	4	128	119	131	67	116	105	-	-	-	-	-	-
Ohio..................	1,441	1,817	1,901	2,232	2,277	2,621	68	84	79	73	67	30	128	114	98	137	101	77	4	-	-	36	34	54
Oklahoma..............	1,160	1,182	895	942	952	1,239	734	719	798	768	832	375	-	-	-	-	-	-	-	-	-	-	-	-
Pennsylvania..........	5,953	6,074	6,187	6,151	7,270	6,489	85	98	100	107	143	148	465	424	409	445	430	431	13	13	13	16	14	14
Texas.................	807	697	601	524	447	366	1,497	1,442	1,386	1,592	1,803	1,812	15	2	-	-	-	-	8	113	139	260	255	297
Utah.8/...............	713	630	475	535	629	1,115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Virginia.........	59	248	166	69	19	136	-	-	-	-	-	-	43	37	551	699	694	19	-	-	-	-	-	-
Wyoming...............	834	930	1,054	1,040	1,144	1,266	126	117	120	127	147	109	-	-	-	-	-	-	-	-	-	-	-	19
Total United States.	36,574	38,557	38,318	38,717	38,653	44,888	5,550	5,222	5,230	5,824	5,780	4,326	1,771	1,532	1,718	2,273	2,449	1,011	382	596	522	721	925	1,208

	Natural Gas (Millions of cubic feet)						Refinery Gas (Millions of cubic feet)						Purchased Electricity (Thousands of Kw-hrs.)					
	1944	1945	1946	1947	1948	1949	1944	1945	1946	1947	1948	1949	1944	1945	1946	1947	1948	1949
Arkansas..............	8,454	8,205	6,965	8,210	9,371	9,076	1,208	1,403	374	1,184	1,152	1,363	23,761	24,623	10,599	19,781	19,774	20,848
California 1/.........	58,860	64,101	47,883	55,937	73,623	47,527	47,432	53,699	44,055	48,540	52,351	56,496	683,739	757,564	684,811	740,124	740,169	846,651
Colorado..............	1	1	1	150	57	992	854	888	745	767	702	1,364	6,931	7,121	7,114	6,518	6,891	16,334
Delaware 2/...........	-	-	-	-	-	-	2,785	2,293	1,378	1,638	1,809	1,340	33,473	34,050	26,582	31,048	36,680	32,659
Georgia 3/............	-	-	-	-	-	-	-	-	-	-	-	4	2,158	2,599	2,381	2,291	3,104	2,876
Illinois..............	401	401	100	-	1,040	1,875	26,295	25,395	22,396	24,370	28,154	30,834	266,076	215,977	117,564	138,803	128,932	122,188
Indiana...............	809	648	1,546	841	1,010	1,485	20,002	18,570	20,994	19,352	17,980	20,679	86,225	83,936	87,516	93,089	98,392	65,200
Kansas................	8,654	10,561	10,446	11,092	11,217	7,656	11,853	11,488	11,448	11,128	10,675	9,706	142,372	144,526	125,291	134,820	137,504	118,857
Kentucky 4/...........	3	66	66	85	100	850	2,816	2,808	2,984	2,950	3,484	3,967	25,020	27,200	29,686	30,040	30,445	40,099
Louisiana.............	49,439	53,029	55,397	61,837	66,602	76,735	31,147	37,123	29,761	29,544	29,147	27,646	354,297	346,152	314,949	340,205	258,082	293,428
Maryland..............	-	-	-	-	-	-	2,550	2,774	3,632	3,712	3,784	3,048	7,005	9,728	6,059	8,515	11,099	6,592
Michigan..............	52	53	51	-	25	146	3,210	2,715	3,341	3,230	3,469	3,913	39,118	37,552	38,070	40,076	41,851	43,890
Minnesota 5/..........	-	-	-	-	-	-	-	-	-	-	-	-	793	794	1,290	1,145	462	822
Mississippi 6/........	-	-	912	230	682	787	125	70	1,100	275	-	-	500	520	7,300	3,374	3,368	3,529
Missouri 7/...........	5	9	6	849	721	1,419	2,191	2,348	2,241	2,209	2,639	3,444	1,192	1,145	1,293	1,366	1,523	1,728
Montana...............	1,897	2,151	2,198	1,541	1,829	1,878	989	891	1,369	1,333	1,410	1,833	4,478	3,865	3,812	4,405	4,803	10,911
New Jersey............	-	-	-	-	-	-	13,848	10,958	11,685	11,358	10,277	11,900	20,239	18,647	15,702	19,635	19,878	18,098
New Mexico............	2,459	2,542	1,192	586	995	818	186	209	248	360	227	253	1,717	1,743	2,608	4,391	6,788	7,081
New York..............	29	28	176	10	10	12	2,236	2,012	1,464	1,848	1,653	2,275	53,909	54,165	50,930	55,798	54,370	55,914
Ohio..................	1	1	1	2	1	122	18,452	18,271	17,654	14,967	15,428	16,972	157,196	173,907	173,923	152,861	160,910	197,880
Oklahoma..............	21,940	23,034	27,589	29,687	30,901	28,907	14,213	15,095	11,998	11,019	11,616	14,196	172,747	193,164	175,504	183,969	175,313	165,759
Pennsylvania..........	678	660	515	414	494	532	19,126	20,341	19,585	22,061	23,247	27,292	441,808	487,252	493,919	455,162	496,182	513,395
Texas.................	155,793	167,035	170,366	185,298	234,018	234,955	123,696	113,151	103,893	106,184	104,110	114,853	449,207	465,545	427,856	424,127	464,631	481,877
Utah 8/...............	279	992	1,000	380	325	311	1,314	1,524	1,435	2,070	2,997	3,251	21,633	23,230	10,196	11,454	14,260	21,421
West Virginia.........	948	1,001	1,018	1,226	1,784	1,780	623	581	596	599	567	660	19,767	19,522	19,940	17,536	16,498	17,887
Wyoming...............	4,609	3,940	4,092	5,517	6,665	4,494	3,972	4,129	3,796	4,039	4,278	4,382	32,763	33,868	32,649	37,272	39,159	71,486
Total United States.	315,311	338,458	331,520	363,892	441,470	422,357	351,123	348,736	318,172	324,737	331,156	361,671	3,048,124	3,168,395	2,867,544	2,957,805	2,971,068	3,177,410

1/ Includes Oregon and Washington.
2/ Includes Rhode Island, Virginia, and Massachusetts.
3/ Includes South Carolina.
4/ Includes Tennessee.
5/ Includes Wisconsin.
6/ Includes Alabama.
7/ Includes Nebraska and South Dakota.
8/ Includes Idaho.

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MINERAL INDUSTRY SURVEYS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
OSCAR L. CHAPMAN, Secretary
JAMES BOYD, Director

FOR RELEASE OCTOBER 25, 1950.

MINERAL MARKET REPORT
MMS. NO. 1924

BORON MINERALS IN 1949

After slumping in 1948, sales of boron minerals increased in 1949 and total sales for the year approached the record high of 1947, according to reports of producers to the Bureau of Mines, United States Department of the Interior. Imports declined but exports set a new all-time high in 1949. Output reached 467,592 short tons containing 139,200 tons of boron oxide, compared with 450,932 tons of mineral containing 134,700 tons of boron oxide sold or used by producers in 1948.

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In 1949 the following firms reported production of boron minerals:

American Potash & Chemical Corp., 3030 West Sixth Street, Los Angeles 54, Calif., plant at Trona, on Searles Lake.
Pacific Coast Borax Co., 510 West Sixth Street, Los Angeles 14, Calif., mine at Boron.
Pittsburgh Plate Glass Co., Columbia Chemical Division, Bartlett, Calif.
United States Borax Co., 510 West Sixth Street, Los Angeles 14, Calif., mine near Shoshone.
West End Chemical Co., 608 Latham Square Building, Oakland 12, Calif., plant at Westend, on Searles Lake.

Boron minerals sold or used by producers in the United States, 1944-49 1/

Year	Gross weight Short tons	B_2O_3 content Short tons	2/ Value
1944	277,586	91,700	$6,579,587
1945	325,935	104,600	7,635,365
1946	430,689	129,800	9,575,866
1947	501,935	145,700	11,844,108
1948	450,932	134,700	11,147,735
1949	467,592	139,200	11,511,893

1/ Borax, anhydrous sodium tetraborate, kernite, boric acid, and colemanite.
2/ Partly estimated.

Prepared by Joseph C. Arundale and F. M. Barsigian under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

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OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE OCTOBER 25, 1950.

MINERALS MARKET REPORT
MMS.NO. 1925

BROMINE IN 1949

Sales of bromine compounds by primary producers increased substantially in 1949, according to reports by producers to the Bureau of Mines, United States Department of the Interior. The bulk of the increase was attributable to greater consumption in ethylene dibromide which is used as an ingredient of anti-knock compounds.

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Bromine and bromine compounds sold by primary producers in the United States, 1948-49

	Pounds		Value
	Gross weight	Bromine content 1/	
1948			
Elemental bromine	3,300,496	3,300,496	$478,849
Sodium bromide	746,121	579,363	194,924
Potassium bromide	2,129,764	1,430,136	547,362
Ammonium bromide	370,975	302,641	105,906
Other, including ethylene dibromide	83,791,199	70,434,915	2/13,498,429
	90,338,555	76,047,551	2/14,825,470
1949			
Elemental bromine	3,428,476	3,428,476	539,355
Sodium bromide	808,922	628,128	209,041
Potassium bromide	1,925,997	1,293,307	498,603
Ammonium bromide	264,862	216,075	77,509
Other, including ethylene dibromide	98,407,345	83,159,723	14,943,400
	104,835,602	88,725,709	16,267,908

1/ Calculated as theoretical bromine content present in compound.
2/ Revised figure.

Bromine and bromine in compounds sold or used by producers in the United States, 1944-49

Year	Pounds	Value	Year	Pounds	Value
1944	102,112,462	$19,712,819	1947	78,177,650	$14,837,104
1945	79,709,857	14,796,229	1948	76,047,551	1/ 14,825,470
1946	42,780,925	8,560,434	1949	88,725,709	16,267,908

1/ Revised figure.

Prepared by Joseph C. Arundale and F. M. Barsigian under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

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The Ethyl-Dow Chemical Co. recovered bromine from sea water at Freeport, Tex., and continued to be the largest producer. The Dow Chemical Co., Midland, Mich., second-largest producer, recovered bromine from Michigan well brines. American Potash & Chemical Corp., 3030 West Sixth Street, Los Angeles 54, Calif., recovered bromine from Searles Lake and Westvaco Chemical Division, Food Machinery & Chemical Corp., 405 Lexington Ave., New York 17, N. Y., from its sea-water bitterns plant at Newark, Calif. The following won bromine from well brines: Great Lakes Chemical Corp., 502 Michigan National Bank Bldg., Grand Rapids 2, Mich., plant at Filer City, Mich.; Michigan Chemical Corp., 500 N. Bankson, St. Louis, Mich.; Morton Salt Co., 120 So. La Salle Street, Chicago 4, Ill., plant at Manistee, Mich.; Rademaker Chemical Corp., Eastlake, Mich.; and Westvaco Chemical Division, Food Machinery & Chemical Corp., South Charleston 3, W. Va.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE OCTOBER 25, 1950

MINERAL MARKET REPORT
MMS NO. 1926

NATURAL SODIUM SULFATES AND CARBONATES IN 1949

After several years of world-wide shortage of soda ash the situation was reversed and in 1949 a general oversupply was a problem of the industry. Sales of both natural sodium carbonates and sulfates by producers in 1949 dropped sharply, according to reports by producers to the Bureau of Mines, United States Department of the Interior.

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Natural sodium sulfates and sodium carbonates sold or used by producers in the United States, 1945-49

Year	Sodium sulfates 1/		Sodium carbonates 2/	
	Short tons	Value	Short tons	Value
1945	178,196	$1,525,159	194,045	$3,034,118
1946	198,781	1,695,413	215,625	3,427,086
1947	257,294	3,329,094	293,051	5,862,178
1948	265,862	4,248,613	3/ 288,769	3/ 6,623,280
1949	186,223	2,733,853	3/ 200,496	3/ 4,163,714

1/ Tonnage figures for sulfates include Glauber's salt converted to 100 percent Na_2SO_4 basis.
2/ Soda ash and trona.
3/ Exclusive of production in Wyoming.

Natural soda ash was produced in California by the following companies in 1949: American Potash & Chemical Corp., 3030 West Sixth Street, Los Angeles 54, Calif., on Searles Lake; Natural Soda Products Co., 506 Central Tower Building, San Francisco 3, Calif., plant at Keeler; Pittsburgh Plate Glass Co., Columbia Chemical Div., Bartlett, Calif.; and West End Chemical Co., 608 Latham Square Bldg., Oakland 12, Calif., plant at Westend.

The following firms reported production of natural sodium sulfates in 1949: American Potash & Chemical Corp., 3030 West Sixth Street, Los Angeles 54, Calif., on Searles Lake; Arizona Chemical Co., 30 Rockefeller Plaza, New York 20, N. Y., plant at Brownfield, Texas (sold to Heat & Power Co., 70 Pine St., New York, N. Y., January 27, 1950); Dale Chemical Industries, Inc., P. O. Box 319, Twenty Nine Palms, Calif.; Iowa Soda Products Co., P. O. Box 476, Council Bluffs, Iowa, plant at Rawlins, Wyo.; Ozark-Mahoning Co., P. O. Box 449, Tulsa 1, Okla., plant at Monahans, Texas; and Wm. E. Pratt, P. O. Box 738, Casper, Wyo.

Prepared by Joseph C. Arundale and F. M. Barsigian under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

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OSCAR L. CHAPMAN, Secretary   JAMES BOYD, Director

FOR RELEASE OCTOBER 27, 1950

MINERAL MARKET REPORT
MMS NO. 1927

CALCIUM CHLORIDE IN 1949

Sales of calcium chloride (and calcium-magnesium chloride) produced from natural brines were smaller in 1949 than in any post-war year, according to reports by producers to the Bureau of Mines, United States Department of the Interior.

Calcium chloride and calcium-magnesium chloride from natural brines sold by producers in the United States, 1944-49
/_In terms of 75 percent $(Ca,Mg)Cl_2$_/

Year	Short tons	Value	Year	Short tons	Value
1944	200,964	$1,621,227	1947	271,206	$2,650,205
1945	218,320	1,818,219	1948 1/..	309,660	3,906,858
1946	262,147	2,278,954	1949	255,797	3,260,675

1/ Revised figures.

The following companies produced calcium chloride (and calcium magnesium chloride) from natural brines in 1949: California Rock Salt Co., 2436 Hunter Street, Los Angeles 21, Calif., plant at Amboy Calif.; Hill Bros. Chemical Co., 2159 Bay Street, Los Angeles 21, Calif., plant at Amboy, Calif.; Desert Properties Co., Frank Thomas, receiver, 374 Court Street, San Bernardino, Calif., plant at Amboy, Calif.; Michigan Chemical Corp., 500 North Bankson, St. Louis, Mich.; Rademaker Chemical Corp., Eastlake, Mich.; Dow Chemical Co., Midland, Mich.; Pomeroy Salt Corp., Pomeroy, Ohio, plant at Minersville, Ohio; Westvaco Chemical Division, Food Machinery & Chemical Corp., South Charleston 3, W. Va.; and Liverpool Salt Co., Hartford, W. Va.

Prepared by Joseph C. Arundale and F. M. Barsigian under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE OCTOBER 27, 1950.

MINERAL MARKET REPORT
MMS NO. 1928

UNIVERSITY OF ILLINOIS

MAGNESITE AND OTHER MAGNESIUM COMPOUNDS IN 1949

Magnesite production in 1949 was the lowest in a decade. Sales of magnesias, particularly refractory magnesias, used principally by the steel industry, were affected by the curtailment of steel production. Strikes in the coal and steel industries, and the general business recession were contributory factors. Lower consumption, partial liquidation of consumer inventories, and a cautious buyers' market combined to restrict sales of most other magnesias and magnesium compounds.

Salient statistics of magnesite, magnesia, and dead-burned dolomite in the United States, 1946-49

	1946	1947	1948	1949
Crude magnesite:				
Mined:				
Short tons	324,640	375,993	(1/)	287,315
Value 2/	$2,225,850	$2,596,747	(1/)	$1,950,153
Caustic-calcined magnesia:				
Sold or used by producers:				
Short tons	45,178	26,831	33,209	32,505
Value	$2,854,538	$2,508,624	$3,380,528	$3,109,381
Average per ton 3/	$63.18	$93.50	$101.80	$95.66
Refractory magnesia:				
Sold or used by producers:				
Short tons	244,824	314,921	330,069	250,389
Value	$7,231,869	$10,127,585	$13,444,587	$10,477,856
Average per ton 3/	$29.54	$32.16	$40.73	$41.85
Dead-burned dolomite:				
Sold by producers:				
Short tons	1,007,983	1,395,203	1,544,755	1,318,708
Value	$10,101,707	$14,295,359	$17,847,182	$15,930,226

1/ Bureau of Mines not at liberty to publish figure.

2/ Partly estimated; most of crude is processed by mining companies, and very little enters open market.

3/ Average receipts f.o.b. mine shipping point.

Prepared by Joseph C. Arundale and F. M. Barsigian under the supervision of G. W. Josephson, Acting Chief, Ceramic and Fertilizer Materials Branch, Minerals Division.

(OVER)

Magnesia is recovered from a variety of sources, as shown in the following table.

Magnesia sold or used by producers in the United States, 1948-49, by kinds and sources

Magnesia	From magnesite, brucite, and dolomite 1/		From well brines, raw sea water, and sea-water bitterns 1/		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
1948						
Caustic-calcined..	11,548	$996,713	21,661	$2,383,815	33,209	$3,380,528
Refractory........	214,628	7,954,089	115,441	5,490,498	330,069	13,444,587
Total........	226,176	8,950,802	137,102	7,874,313	363,278	16,825,115
1949						
Caustic-calcined..	8,992	831,674	23,513	2,277,707	32,505	3,109,381
Refractory........	175,364	6,763,294	75,025	3,714,562	250,389	10,477,856
Total........	184,356	7,594,968	98,538	5,992,269	282,894	13,587,237

1/ Magnesia made from a combination of dolomite and sea water is included with that from sea water.

OTHER MAGNESIUM COMPOUNDS

Production and sales of both light and heavy high-grade magnesias and magnesium carbonate in 1949 followed the general trend and were lower as a result of the moderate recession in consuming industries.

Specified magnesium compounds produced, sold, and used by producers in the United States, 1948-49

Product 1/	Plants 1/	Produced (short tons)	Sold 2/		Used (short tons)
			Short tons	Value	
1948					
Specified magnesias (basis 100 percent MgO), U.S.P. and technical:					
Extra-light and light..........	6	1,826	1,837	$909,697	(3/)
Heavy..........................	3	1,386	1,289	717,549	-----
Total..........................	4/ 6	-----	3,126	1,627,246	(3/)
Precipitated magnesium carbonate....	11	60,898	7,315	939,306	52,798
1949					
Specified magnesias (basis 100 percent MgO), U.S.P. and technical:					
Extra-light and light..........	5	1,637	1,644	837,751	-----
Heavy..........................	3	933	949	395,994	(3/)
Total..........................	4/ 5	-----	2,593	1,233,745	(3/)
Precipitated magnesium carbonate....	10	55,925	7,273	924,299	48,641

1/ In addition, in 1948-49, magnesium chloride, hydroxide, nitrate, and sulfate were produced. Bureau of Mines not at liberty to publish figures.

2/ Sales by a producer to an affiliated consumer for immediate use are not included with "Sold" but are with "Used."

3/ Bureau of Mines not at liberty to publish figure.

4/ A plant producing more than 1 grade is counted but once in arriving at total.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Oscar L. Chapman, Secretary **JAMES BOYD, Director**

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FOR RELEASE: November 6, 1950 MINERAL MARKET REPORT, NO. MMS 1930

MARKETED PRODUCTION OF NATURAL GAS IN 1949 INCREASED 5 PERCENT OVER 1948

Marketed production of natural gas in 1949 increased 5 percent to 5,419,736 million cubic feet compared with 5,148,020 million in 1948. The net withdrawal of gas from reserves was 6,207,937 million cubic feet compared with 5,900,827 million in 1948. The quantity of gas in underground storage reservoirs was increased by 65,683 million cubic feet in 1949.

Of the states marketing more than 100 billion cubic feet per year, Kansas, Louisiana, New Mexico, and Texas showed increases in marketed production in 1949 and California, Oklahoma, and West Virginia showed decreases. With the exception of Mississippi, all other states showed decreases.

Total consumption of natural gas in the United States was 5,197,014 million cubic feet in 1949 compared with 4,945,149 million in 1948. The quantities consumed by various classes of consumers and the percentage change compared with 1948 are as follows: residential, 992,544 million cubic feet, +11 percent; commercial, 347,818, +8 percent; field, 1,061,158, +4 percent; petroleum refineries, 422,357, -4 percent; other industrial, 2,373,137, +5 percent.

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The average value at the well of all gas marketed, declined from 6.5 cents per thousand cubic feet in 1948 to 6.3 cents in 1949. This decline resulted from the high value eastern states producing a smaller part of the total than previously. The total value at point of consumption of all natural gas used in 1949 in the United States was $1,320,671,000. The average value at point of consumption was 25.4 cents per thousand cubic feet, an increase of 1.3 cents over 1948.

The number of residential consumers increased 9 percent to 14,690,000 in 1949, of which 3,096,328 used natural gas mixed with manufactured gas. The number of commercial consumers increased 6 percent to 1,231,000 in 1949, of which 179,085 used mixed gas.

Interstate transportation of natural gas increased by 14 percent to 2,007,878 million cubic feet. Included in this quantity are 226 million cubic feet delivered to Canada and 19,828 million delivered to Mexico.

Prepared under the supervision of F. S. Lott, Petroleum and Natural Gas Economics Coordinator, Petroleum and Natural Gas Branch, Fuels and Explosives Division.

INTERSTATE TRANSPORTATION, AND EXPORTS OF NATURAL GAS IN 1949 1/

Producing Regions	Shipments million cu. ft.	Consuming State	Received & Consumed million cu. ft.
Middle Atlantic			
New Jersey	-	Canada	109
New York	376	New York	14,250
Pennsylvania	14,482	Ohio	60
		Pennsylvania	294
		West Virginia	145
Total	14,858	Total	14,858
South Atlantic			
Delaware	-	Canada	16
District of Columbia	-	District of Columbia	3,658
Florida	-	Maryland	1,993
Georgia	-	New York	8,071
Maryland	-	Ohio	56,047
North Carolina	-	Pennsylvania	51,030
South Carolina	-	Tennessee	25
Virginia	25	Virginia	1,778
West Virginia	122,593		
Total	122,618	Total	122,618
East North Central			
Illinois	-	Illinois	33
Indiana	42	Kentucky	9
Michigan	-		
Ohio	-		
Wisconsin	-		
Total	42	Total	42
East South Central			
Alabama	-	Alabama	22,443
Kentucky	28,825	Arkansas	42
Mississippi	48,011	Canada	2
Tennessee	-	District of Columbia	963
		Florida	3,393
		Georgia	17,869
		Illinois	244
		Indiana	634
		Louisiana	3,703
		Maryland	430
		Mississippi	11
		Missouri	258
		New York	550
		Ohio	14,166
		Pennsylvania	3,987
		Tennessee	74
		Virginia	435
		West Virginia	7,632
Total	76,836	Total	76,836
West North Central			
Iowa	-	Colorado	27,220
Kansas	196,554	Illinois	6,369
Minnesota	-	Indiana	8,149
Missouri	-	Louisiana	26,678
Nebraska	-	Kentucky	7
North Dakota	534	Michigan	20,996
South Dakota	1	Minnesota	37,797
		Missouri	19,125
		Montana	428
		Nebraska	36,856
		Ohio	7,485
		Oklahoma	1,255
		South Dakota	3,967
		Wyoming	757
Total	197,089	Total	197,089
West South Central			
Arkansas	1,560	Alabama	49,425
Louisiana	327,367	Arizona	23,640
Oklahoma	173,723	Arkansas	70,097
Texas	982,850	California	50,511
		Canada	99
		Colorado	45,606
		Delaware	769
		District of Columbia	5,006
		Florida	6,753
		Georgia	41,451
		Illinois	190,549
		Indiana	48,753
		Iowa	34,167
		Kansas	123,816
		Kentucky	29,336
		Louisiana	35,141
		Maryland	2,710
		Mexico	18,435
		Michigan	64,478
		Minnesota	22,199
		Mississippi	40,282
		Missouri	82,808
		Nebraska	15,838
		New Jersey	3,272
		New Mexico	15,377
		New York	29,577
		Ohio	152,559
		Oklahoma	18,586
		Pennsylvania	110,095
		South Dakota	2,266
		Tennessee	43,512
		Texas	41,655
		Virginia	2,396
		West Virginia	61,034
		Wisconsin	1,956
		Wyoming	1,346
Total	1,485,500	Total	1,485,500
Mountain			
Arizona	-	Arizona	22,634
Colorado	5,652	California	43,588
Idaho	-	Colorado	566
Montana	5,853	Mexico	1,393
Nevada	-	Montana	4,115
New Mexico	79,710	Nebraska	2,566
Utah	25	New Mexico	5,672
Wyoming	19,695	North Dakota	3,021
		South Dakota	2,154
		Texas	5,857
		Utah	18,601
		Wyoming	768
Total	110,935	Total	110,935
U.S. Total	2,007,878	U.S. Total	2,007,878

1/ Includes exports to:

Mexico	19,828
Canada	226

SUMMARY OF NATURAL GAS STATISTICS, 1949

State	Production 1/		Consumption											Gas used at electric public-utility power plants (millions of cu. ft.) 2/
			Residential (Domestic)			Commercial			Industrial					
									Field (drilling, pumping, etc.)		All Other Industrial			
											Millions of cu. ft.			
	Millions of cu. ft.	Average value at wells per M. cu. ft. (cents)	Thousands of consumers	Millions of cu. ft.	Average value at points of consumption per M. cu. ft. (cents)	Thousands of consumers	Millions of cu. ft.	Average Value at points of consumption per M.cu.ft. (cents)	Millions of cu. ft.	Value at points of consumption (thousands of dollars)	Fuel at petroleum refineries	Other including electric public-utility power plants	Value at points of consumption (thousands of dollars)	
Alabama........	-	-	168	8,816	82.4	18	3,137	52.1	—	-	390	58,729	10,122	9,545
Arizona........	-	-	98	5,061	80.4	12	5,973	35.6	-	-	-	33,455	6,868	10,812
Arkansas.......	47,788	4.0	138	14,229	49.5	23	7,015	36.1	13,589	650	9,076	70,013	7,032	14,040
California.....	550,903	11.8	2,509	174,811	61.3	191	77,800	39.7	130,218	15,277	47,527	188,967	56,491	65,342
Colorado.......	8,490	5.2	155	23,244	48.6	21	10,973	41.3	2,223	126	998	36,232	5,245	15,168
Georgia........	-	-	152	13,025	67.8	16	6,048	37.2	-	-	-	39,751	7,383	22,755
Illinois.......	12,391	11.3	1,567	50,110	101.6	90	14,111	68.3	13,385	1,119	1,875	123,065	30,456	30,342
Indiana........	334	7.4	386	15,101	109.0	25	4,242	87.7	134	8	1,485	34,301	10,957	4,729
Iowa...........	-	-	200	14,913	74.3	19	5,105	58.00	-	-	-	37,602	7,189	17,660
Kansas.........	294,078	5.4	325	38,471	48.0	38	19,314	33.0	23,984	1,740	7,656	118,698	17,057	34,026
Kentucky.......	51,851	19.1	231	19,776	55.4	26	6,035	47.3	4,717	898	850	14,126	4,811	2,605
Louisiana......	732,845	4.4	360	21,184	58.5	37	11,029	34.0	152,877	8,153	76,735	188,887	25,384	57,665
Michigan.......	14,753	15.2	919	47,582	92.9	43	7,320	83.4	1,940	229	146	27,327	15,104	57
Minnesota......	-	-	270	20,376	74.7	15	4,521	48.0	-	-	-	34,143	6,614	18,085
Mississippi....	68,062	6.2	134	8,670	71.3	18	5,397	38.8	9,030	685	397	37,493	5,277	10,341
Missouri.......	24	16.7	534	38,086	71.0	30	8,668	45.3	43	7	1,291	51,579	11,832	12,691
Montana........	35,291	5.6	66	11,588	46.1	6	6,982	30.5	1,791	214	1,878	12,122	2,107	871
Nebraska.......	-	-	163	16,249	68.3	15	8,344	40.0	-	-	128	27,190	5,368	12,418
New Mexico.....	204,961	2.9	74	7,012	62.9	8	4,593	30.6	43,299	1,348	818	71,701	5,152	10,967
New York.......	3,693	24.6	645	35,813	86.1	43	7,839	76.6	262	77	12	7,138	4,286	624
Ohio...........	46,512	19.3	1,487	134,221	61.5	154	28,747	56.6	879	214	122	82,243	33,216	3,608
Oklahoma.......	435,262	4.7	384	38,220	44.9	48	16,974	31.6	96,740	4,134	28,907	77,738	12,261	33,419
Pennsylvania...	84,739	25.6	1,478	85,380	67.1	108	16,517	56.8	6,440	2,129	532	100,880	37,694	57
Tennessee......	83	9.1	110	9,628	73.0	15	4,456	54.8	-	-	-	27,525	4,764	5,242
Texas..........	2,588,921	4.6	1,165	76,057	62.2	141	36,845	39.4	527,916	24,001	234,955	782,606	75,752	147,017
West Virginia..	181,176	16.2	249	30,539	38.9	25	7,603	35.7	18,657	3,501	1,780	53,223	14,977	289
Wyoming........	50,815	5.6	36	5,968	49.5	5	3,608	34.1	12,995	780	4,494	4,342	1,157	1,049
Other States 3/	6,764	5.9	687	28,414	101.9	41	8,622	66.5	39	2	311	32,061	7,182	8,697
Total: 1949...	5,419,736	6.3	14,690	992,544	67.1	1,231	347,818	45.5	1,061,158	65,292	422,357	2,373,137	431,738	550,121
1948...	5,148,020	6.5	13,508	896,348	65.3	1,145	323,054	44.0	1,021,513	61,123	441,470	2,262,764	405,078	478,097

1/ Includes gas stored and lost in transmission.
2/ Federal Power Commission: Includes gas other than natural, impossible to segregate and therefore shown separately from main table.
3/ Includes Delaware, District of Columbia, Florida, Maryland, New Jersey, North Dakota, South Dakota, Utah, Virginia, and Wisconsin.

GROSS PRODUCTION AND DISPOSITION OF NATURAL GAS IN THE UNITED STATES, BY STATES, IN 1949, IN MILLIONS OF CUBIC FEET

State	Estimated production 1/			Estimated disposition		
	From gas wells	From oil wells	Total	Marketed production 2/	Repressuring	Vented and wasted 3/
Arkansas.........	37,500	30,870	68,370	47,788	15,431	5,151
California.......	217,000	518,800	735,800	550,903	173,954	10,943
Colorado.........	6,500	7,750	14,250	8,490	370	5,390
Illinois.........	350	37,500	37,850	12,391	3,566	21,893
Indiana..........	250	1,900	2,150	334	927	889
Kansas...........	237,800	86,600	324,400	294,078	3,339	26,983
Kentucky.........	46,700	9,350	56,050	51,851	1,286	2,913
Louisiana........	785,250	240,250	1,025,500	732,845	185,533	107,122
Michigan.........	14,350	6,600	20,950	14,753	413	5,784
Mississippi......	74,100	38,000	112,100	68,062	38,603	5,435
Montana..........	33,100	3,750	36,850	35,291	183	1,376
New Mexico.......	49,920	191,700	241,620	204,961	7,109	29,550
New York.........	3,600	170	3,770	3,693	72	5
Ohio.............	47,400	1,700	49,100	46,512	2,087	501
Oklahoma.........	373,200	258,000	631,200	435,262	26,920	169,018
Pennsylvania.....	81,500	3,500	85,000	84,739	170	91
Texas............	2,740,000	1,082,000	3,822,000	2,588,921	798,211	434,868
Utah.............	6,150	210	6,360	6,126	-	234
West Virginia....	178,300	7,000	185,300	181,176	1,633	2,491
Wyoming..........	52,450	35,000	87,450	50,815	13,398	23,237
Other States 4/	706	49	755	745	-	10
Total 1949.....	4,986,126	2,560,699	7,546,825	5,419,736	1,273,205	853,884
Total 1948.....	4,588,547	2,590,230	7,178,777	5,148,020	1,220,579	810,178

1/ Marketed production plus quantities used in repressuring, vented and wasted.
2/ Includes gas utilized, stored and lost in transmission.
3/ Includes gas (mostly residue) blown to the air, but does not include direct waste on producing properties, except where data are available.
4/ Florida, Missouri, North Dakota, South Dakota, Tennessee, and Virginia.

Interior—Duplicating Section, Washington, D. C.

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MINERAL INDUSTRY SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

OSCAR L. CHAPMAN, Secretary JAMES BOYD, Director

FOR RELEASE December 15, 1950

MINERAL MARKET REPORT
NO. MMS 1931

PORTLAND AND OTHER HYDRAULIC CEMENTS IN 1949
FINAL ANNUAL FIGURES

PRODUCTION:- The demand for cement in 1949 was exceptionally high and consequently a new production record was attained. The output of 209,727,417 barrels of portland cement from 150 plants, as reported to the Bureau of Mines, United States Department of the Interior, was 2 percent greater than in 1948. On the other hand, the production of other hydraulic cements, natural, masonry (natural), and puzzolan (slag-lime), by 9 plants totaled 3,185,229 barrels - a decrease of 7 percent from the previous year.

SHIPMENTS:- The demand for portland cement, as gauged by shipments from mills, increased to 206,080,325 barrels, valued at $473,177,032 from 204,304,662 barrels, valued at $445,678,073 in 1948. This increase in shipments of portland cement was due to the high rate of construction throughout the United States. The average value of $2.30 per barrel in 1949 compared with $2.18 in 1948 reflects the continued rise in labor and manufacturing costs. Shipments of "other" hydraulic cements declined to 3,233,525 barrels from a total of 3,375,135 barrels in 1948. The average price in 1949 was $2.48 per barrel.

STOCKS:- Mill stocks of portland cement on hand December 31, 1949 totaled 14,740,282 barrels - an increase of approximately 33 percent over the corresponding date of 1948. Stocks of "other" cements declined from 209,901 barrels to 161,605 barrels in 1949. Without exception all districts showed increases in stocks at the year-end over the preceding year; these increases ranged from 2 percent in the Michigan, California and Western Missouri-Nebraska-Oklahoma-Arkansas districts to 119 percent in the Alabama district. The trend of month-end stocks of clinker in 1949 followed essentially the pattern of 1948 as the peak was reached in March and the low in November.

CAPACITY:- The total estimated annual capacity of the portland cement industry in 1949 was 258,948,399 barrels, compared with 254,272,378 barrels in 1948. The capacity utilized during the year was 81 percent - the same as in 1948. Capacity estimates indicated gains in 10 and declines in 8 manufacturing districts, while one district maintained the same total.

FUEL:- Of all the fuels used in the manufacture of portland cement (coal, fuel oil, natural gas, and by-product gas), only natural gas showed an increase in the amount consumed in 1949.

TYPES OF CEMENT:- A breakdown of total production of portland cement, by various types, is indicated in one of the attached tables. The output of types I, II, III, IV, white, and air-entrained cements, showed increases in 1949 compared with the preceding year, but the production of type V, oil-well, and portland-puzzolan, fell below the totals of the preceding year.

SHIPMENTS BY TYPES OF CARRIERS:- Portland cement in 1949, as in 1948, was transported largely by railroad (78 percent), followed by truck (21 percent). Shipments by boat accounted for the balance. Details of shipments in bulk and in containers are shown in one of the attached tables.

Prepared by D. G. Runner, and Esther V. Balser, under the supervision of G. W. Josephson, Chief, Construction and Chemical Materials Branch, Minerals Division.

Interior—Duplicating Section, Washington, D. C. 86892

Finished portland cement produced, shipped, and in stock in the United States, 1948-49, by districts

District	Active plants		Production			Shipments from mills								Stocks at mills on Dec. 31		
	1948	1949	Barrels		Percent change from 1948	1948			1949					Barrels		Percent change from 1948
			1948	1949		Barrels	Value		Barrels	Value		Percent change from 1948 in--		1948	1949	
							Total	Average		Total	Average	Barrels	Average value			
E. Pa., Maryland----	21	21	33,589,877	33,799,369	+0.6	33,518,779	$71,150,988	$2.12	32,956,324	$75,344,266	$2.29	-1.7	+8.0	1/1,728,689	2,571,734	+48.8
New York, Maine-----	11	11	13,504,096	13,838,715	+2.5	13,475,277	28,825,985	2.14	13,737,319	31,009,863	2.26	+1.9	+5.6	1/1,014,835	1,116,231	+10.0
Ohio----------------	9	9	10,035,211	10,313,496	+2.8	10,020,198	20,496,930	2.05	10,157,001	22,388,726	2.20	+1.4	+7.3	1/600,020	756,515	+26.1
W. Pa., W. Va.------	8	7	8,940,151	8,930,125	-0.1	8,931,245	18,518,280	2.07	8,541,756	19,105,498	2.24	-4.4	+8.2	1/570,207	958,576	+68.1
Michigan------------	7	7	11,410,085	12,767,500	+11.9	11,116,911	23,533,001	2.12	12,747,791	28,823,055	2.26	+14.7	+6.6	1,184,758	1,204,467	+1.7
Illinois------------	4	4	7,570,536	8,127,656	+7.4	7,573,404	15,200,723	2.01	7,976,972	16,645,730	2.09	+5.3	+4.0	1/478,666	629,350	+31.5
Ind., Ky., Wis.-----	6	6	12,333,325	12,683,409	+2.8	12,153,061	24,479,875	2.01	12,433,483	25,566,156	2.06	+2.3	+2.5	1/758,927	1,008,853	+32.9
Alabama-------------	7	7	9,908,219	9,721,542	-1.9	9,948,600	20,140,177	2.02	9,394,348	20,320,658	2.16	-5.6	+6.9	1/274,577	601,771	+119.2
Tennessee-----------	6	6	6,727,160	6,077,549	-9.7	6,774,926	13,667,060	2.02	5,992,571	12,857,600	2.15	-11.5	+6.4	1/211,699	296,677	+40.1
Va.,Ga.,Fla.,La.,S.C	7	7	7,134,091	8,505,552	+19.2	7,058,877	16,201,937	2.30	8,412,037	20,122,022	2.39	+19.2	+3.9	1/284,230	377,745	+32.9
Iowa----------------	5	5	6,807,214	6,834,445	+0.4	6,835,578	14,424,526	2.11	6,655,208	14,602,554	2.19	-2.6	+3.8	473,718	652,955	+37.8
E.Mo., Minn., S. Dak	6	6	9,654,828	9,867,811	+2.2	9,649,881	20,740,674	2.15	9,452,303	21,601,203	2.29	-2.0	+6.5	1/477,478	892,986	+87.0
Kansas--------------	6	6	7,933,899	7,824,620	-1.4	7,930,965	16,188,379	2.04	7,640,540	16,880,156	2.21	-3.7	+8.3	271,798	455,878	+67.7
W. Mo.,Neb.,Okla., Arkansas----------	6	6	6,960,336	7,412,145	+6.5	6,860,520	14,528,697	2.12	7,403,827	16,418,363	2.22	+7.9	+4.7	380,620	388,938	+2.2
Texas---------------	10	10	13,700,633	14,949,812	+9.1	13,786,846	30,352,972	2.20	14,741,805	33,409,347	2.27	+6.9	+3.2	1/429,334	637,341	+48.4
Colo.,Ariz.2/,Wyo., Mont.,Utah, Idaho-	9	10	5,456,272	6,261,861	+14.8	5,250,131	14,314,150	2.73	6,149,542	17,227,366	2.80	+17.1	+2.6	1/382,556	494,875	+29.4
California----------	11	11	24,601,892	23,218,356	-5.6	24,162,926	57,742,226	2.39	23,201,982	57,464,213	2.48	-4.0	+3.8	1/1,056,126	1,072,500	+1.6
Oregon, Washington--	9	9	6,740,050	6,401,510	-5.0	6,816,082	18,224,466	2.67	6,314,030	17,281,215	2.74	-7.4	+2.6	1/493,008	580,488	+17.7
Puerto Rico---------	2	2	2,440,388	2,191,944	-10.2	2,440,455	6,947,027	2.85	2,171,486	6,109,041	2.81	-11.0	-1.4	22,444	42,902	+91.2
Total---------	150	150	205,448,263	209,727,417	+2.1	204,304,662	445,678,073	2.18	206,080,325	473,177,032	2.30	+0.9	+5.5	1/11,093,690	14,740,782	+32.9
Pennsylvania--------	24	24	38,310,627	38,122,065	-0.5	38,255,543	81,638,484	2.13	36,905,254	84,839,175	2.30	-3.5	+8.0	1/2,056,756	3,273,567	+59.2
Missouri------------	5	5	8,503,012	8,791,943	+3.4	8,428,343	17,911,257	2.13	8,518,636	19,347,814	2.27	+1.1	+6.6	1/458,468	731,775	+59.6

1/ Revised figure.
2/ Arizona first began operating in December 1949.

Destination of shipments of finished portland cement from mills in the United States, 1947-49, by States

Destination	1947 (Barrels)	1948 (Barrels)	1949	
			Barrels	Change from 1948 (Percent)
Continental:				
Alabama	2,930,108	3,178,143	2,910,444	-8.4
Arizona 1/ 2/	1,491,197	1,766,820	1,262,378	-28.6
Arkansas	1,349,460	1,729,254	2,058,505	+19.0
California	19,301,504	20,567,994	19,943,561	-3.0
Colorado	1,837,330	1,972,316	2,041,456	+3.5
Connecticut 1/	2,156,811	2,364,453	2,381,551	+0.7
Delaware 1/	431,850	502,794	746,858	+48.5
District of Columbia 1/	1,130,816	1,191,379	1,345,897	+13.0
Florida	4,221,661	4,493,013	4,487,460	-0.1
Georgia	3,051,785	3,100,808	2,848,784	-8.1
Idaho	838,121	870,172	1,041,074	+19.6
Illinois	9,331,506	10,580,915	11,385,563	+7.6
Indiana	5,216,917	5,596,464	5,578,176	-0.3
Iowa	4,262,177	4,272,285	4,844,659	+13.4
Kansas	3,724,882	4,213,812	4,137,843	-1.8
Kentucky	2,903,057	2,780,706	2,402,306	-13.6
Louisiana	3,134,441	3,820,931	3,986,777	+4.3
Maine	787,507	843,560	638,383	-24.3
Maryland	3,145,913	3,470,828	3,498,499	+0.8
Massachusetts 1/	2,941,870	3,328,225	3,542,911	+6.5
Michigan	8,048,093	8,942,493	9,291,483	+3.9
Minnesota	3,914,258	4,195,552	4,441,401	+5.9
Mississippi 1/	1,537,801	1,746,788	1,787,000	+2.3
Missouri	4,893,203	5,299,347	4,541,405	-14.3
Montana	556,765	674,642	782,781	+16.0
Nebraska	1,817,942	2,094,185	2,537,791	+21.2
Nevada 1/	268,823	262,543	249,342	-5.0
New Hampshire 1/	519,317	505,735	542,685	+7.3
New Jersey 1/	5,272,019	6,103,555	6,109,668	+0.1
New Mexico 1/	1,108,513	1,204,872	1,291,189	+7.2
New York	12,730,701	14,272,508	16,353,001	+14.6
North Carolina 1/	3,170,599	3,434,257	3,048,417	-11.2
North Dakota 1/	753,385	901,701	725,855	-19.5
Ohio	9,684,692	10,249,103	10,057,975	-1.9
Oklahoma	3,295,015	3,830,317	3,884,555	+1.4
Oregon	1,835,962	2,159,785	2,559,215	+18.5
Pennsylvania	10,974,095	12,480,244	12,738,153	+2.1
Rhode Island 1/	546,547	739,570	728,803	-1.5
South Carolina 3/	1,335,828	1,429,335	1,488,318	+4.1
South Dakota	924,729	1,050,780	1,093,465	+4.1
Tennessee	4,102,443	4,081,837	4,139,920	+1.4
Texas	11,520,189	12,893,560	13,183,797	+2.3
Utah	954,883	1,039,132	1,155,920	+11.2
Vermont 1/	497,077	458,626	445,759	-2.8
Virginia	3,571,849	3,550,455	3,832,190	+7.9
Washington	3,512,855	4,096,601	4,031,244	-1.6
West Virginia	2,400,206	2,155,276	2,803,256	+30.1
Wisconsin	4,585,162	5,060,929	4,540,926	-10.3
Wyoming	397,814	599,926	779,372	+29.9
Unspecified	333,666	35,141	52	-99.9
Total continental United States	179,253,344	196,193,667	200,248,023	+2.1
Outside continental United States 4/	8,238,525	8,110,995	5,832,302	-28.1
Total shipped from cement plants	187,491,869	204,304,662	206,080,325	+0.9

1/ Non-cement-producing State.

2/ Included with cement producing States in December 1949.

3/ South Carolina was a non-cement producing State in 1947 and 1948 only.

4/ Direct shipments by producers to foreign countries and to noncontiguous Territories (Alaska, Hawaii, Puerto Rico, etc.), including distribution from Puerto Rican mills.

Portland-cement-manufacturing capacity of the United States, 1948-49, by districts

District	Estimated capacity (barrels)		Percent of capacity utilized	
	1948	1949	1948	1949
Eastern Pennsylvania, Maryland	38,943,325	38,403,325	86.3	88.0
New York , Maine	17,561,640	17,398,048	76.9	79.5
Ohio	12,952,515	12,952,515	77.5	79.6
Western Pennsylvania, West Virginia	13,961,300	14,961,300	64.0	59.7
Michigan	14,200,000	15,394,776	80.4	82.9
Illinois	9,864,510	9,524,510	76.7	85.3
Indiana, Kentucky, Wisconsin	17,989,163	17,824,000	68.6	71.2
Alabama	11,177,660	10,967,660	88.6	88.6
Tennessee	7,357,000	7,322,000	91.4	83.0
Virginia, Georgia, Florida, Louisiana, South Carolina	9,980,000	9,740,000	71.5	87.3
Iowa	8,430,000	7,830,000	80.7	87.3
Eastern Missouri, Minnesota, South Dakota	11,387,265	11,387,265	84.8	86.7
Kansas	9,497,000	9,407,000	83.5	83.2
Western Missouri, Nebraska, Oklahoma, Arkansas	7,850,000	8,600,000	88.7	86.2
Texas	16,006,000	16,596,000	85.6	90.1
Colorado, Arizona 1/, Wyoming, Montana, Utah, Idaho	7,625,000	9,010,000	71.6	69.5
California	29,170,000	29,870,000	84.3	77.7
Oregon, Washington	7,780,000	8,130,000	86.6	78.7
Puerto Rico	2,540,000	3,630,000	96.1	60.4
Total	254,272,378	258,948,399	80.8	81.0

1/ Arizona began operating in December 1949.

Portland cement produced in the United States,[1] 1948-49, by kind of fuel

Fuel	Finished cement produced			Fuel consumed[2]		
	Number of plants	Barrels of 376 pounds	Percent of total	Coal (short tons)	Oil (barrels of 42 gallons)	Natural gas (M cubic feet)
1948						
Coal	86	[3]111,639,361	54.3	6,828,396	------------	------------
Oil	11	[3]16,134,873	7.9	------------	3,228,053	------------
Natural gas	13	[3]17,428,962	8.5	------------	------------	26,178,518
Coal and oil	10	16,404,113	8.0	910,801	546,288	------------
Coal and natural gas	14	16,952,731	8.2	574,555	------------	[4]14,057,923
Oil and natural gas	7	15,134,254	7.4	------------	757,296	19,182,357
Coal, oil, and natural gas	9	11,753,969	5.7	239,898	126,719	13,894,394
Total	150	205,448,263	100.0	[5]8,553,650	4,658,356	[4]73,313,192
1949						
Coal	79	[3]108,639,061	51.8	6,252,160	------------	------------
Oil	11	[3]12,317,399	5.9	------------	2,475,865	------------
Natural gas	14	[3]20,215,714	9.6	------------	------------	30,698,450
Coal and oil	13	19,920,475	9.5	1,093,047	888,571	------------
Coal and natural gas	16	19,192,617	9.2	497,829	------------	[6]19,667,208
Oil and natural gas	8	18,081,667	8.6	------------	1,133,474	18,746,653
Coal, oil, and natural gas	9	11,360,484	5.4	144,524	88,688	15,576,973
Total	150	209,727,417	100.0	[7]7,987,560	4,586,598	[6]84,689,284

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[1] Including Puerto Rico.

[2] Figures compiled from monthly estimates of producers.

[3] Average consumption of fuel per barrel of cement produced was as follows: 1948--Coal, 122.3 pounds; oil, 0.2001 barrel; natural gas, 1,502 cubic feet. 1949--Coal, 115.1 pounds; oil, 0.2010 barrel; natural gas, 1,519 feet.

[4] Includes 1,174,377 M cubic feet of byproduct gas.

[5] Comprises 8,162 tons of anthracite and 8,545,488 tons of bituminous coal.

[6] Includes 168,088 M cubic feet of byproduct gas.

[7] Comprises 22,019 tons of anthracite and 7,965,541 tons of bituminous coal.

Shipments of portland cement from mills in the United States,[1] 1947-49,
in bulk and in containers, by types of carriers

(Barrels of 376 pounds)

Type of carrier	In bulk		In containers				Total shipments	
			Bags		Other containers[2]	Total		
	Barrels	Percent	Paper (Barrels)	Cloth (Barrels)	(Barrels)	(Barrels)	Barrels	Percent
1947								
Truck	[3]13,343,705	19.3	14,635,937	2,006,759	-------	16,642,696	29,986,401	16.0
Railroad	54,198,948	78.5	82,457,113	17,044,651	13,617	99,515,381	153,714,329	82.0
Boat	1,525,322	2.2	2,139,597	126,220	-------	2,265,817	3,791,139	2.0
Total	69,067,975	100.0	99,232,647	19,177,630	13,617	118,423,894	187,491,869	100.0
Percent of total	36.8	-----	53.0	10.2	(4)	63.2	100.0	-----
1948								
Truck	[3]18,526,570	21.7	16,242,337	1,329,250	-------	17,571,587	34,538,532	16.9
Railroad	65,210,300	76.6	82,889,312	16,513,115	15,850	99,418,277	166,188,202	81.3
Boat	1,440,323	1.7	2,103,000	34,605	-------	2,137,605	3,577,928	1.8
Total	85,177,193	100.0	101,234,649	17,876,970	15,850	119,127,469	204,304,662	100.0
Percent of total	41.7	-----	49.5	8.8	(4)	58.3	100.0	-----
1949								
Truck	[3]24,347,015	23.9	16,035,282	1,445,980	------	17,481,262	42,476,387	20.6
Railroad	75,382,590	74.0	72,671,678	13,042,686	9,335	85,723,699	160,463,954	77.9
Boat	2,171,648	2.1	941,863	32,123	125	974,111	3,139,984	1.5
Total	101,901,253	100.0	89,648,823	14,520,789	9,460	104,179,072	206,080,325	100.0
Percent of total	49.5	-----	43.5	7.0	(4)	50.5	100.0	-----

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[1] Includes Puerto Rico. [2] Includes steel drums and iron and wood barrels. [3] Includes cement used at mills by producers as follows--1947: 813,830 barrels; 1948: 645,420 barrels; 1949: 643,174 barrels.
[4] Less than 0.05 percent.

Portland cement produced and shipped in the United States,[1] 1945-49, by types

Type and year	Active plants	Production (barrels)	Shipments		
			Barrels	Value	
				Total	Average
General use and moderate heat (types I and II:					
1945	145	89,922,894	93,379,480	$148,653,647	$1.59
1946	153	139,173,936	144,038,503	244,051,517	1.69
1947	150	157,525,464	158,637,287	297,619,024	1.88
1948	150	174,909,904	173,365,414	374,584,386	2.16
1949	150	177,597,585	174,569,746	396,817,234	2.27
High-early-strength (type III):					
1945	103	5,487,460	5,602,875	11,280,392	2.01
1946	111	6,716,488	7,183,209	14,977,117	2.09
1947	92	6,015,985	5,899,830	13,284,390	2.25
1948	92	5,513,312	5,615,894	14,224,177	2.53
1949	87	5,979,435	5,649,482	15,047,036	2.66
Low-heat (type IV):					
1945	3	35,715	30,840	50,358	1.63
1946	3	139,996	136,541	248,057	1.82
1947	5	125,113	137,469	252,721	1.84
1948	3	135,871	153,994	306,962	1.99
1949	6	159,739	129,411	329,284	2.54
Sulfate-resisting (type V):					
1945	4	5,141	3,915	7,952	2.03
1946	4	65,880	60,950	125,204	2.05
1947	5	64,126	94,455	231,523	2.45
1948	6	204,862	163,127	505,710	3.10
1949	5	95,023	113,370	472,016	4.16
Oil-well:					
1945	16	1,231,756	1,305,493	2,499,739	1.91
1946	17	1,510,843	1,568,881	3,110,351	1.98
1947	18	1,701,305	1,708,719	3,592,577	2.10
1948	14	1,817,746	1,966,854	4,972,499	2.53
1949	17	1,714,938	1,745,908	4,554,603	2.61
White:					
1945	5	425,299	456,210	1,859,070	4.08
1946	5	774,215	797,194	3,299,200	4.14
1947	4	855,323	837,489	3,762,417	4.49
1948	4	1,034,500	1,005,356	4,510,169	4.49
1949	4	1,071,100	1,031,408	4,985,107	4.83
Portland-puzzolan:					
1945	3	212,156	250,944	389,482	1.55
1946	5	1,092,607	1,091,854	1,696,870	1.55
1947	5	1,519,961	1,529,551	2,970,919	1.94
1948	6	1,545,584	1,693,207	3,733,436	2.20
1949	4	1,080,848	1,147,694	2,602,853	2.27
Air-entrained:					
1945[2]	52	5,075,332	4,903,355	7,773,719	1.59
1946	69	13,765,384	13,850,983	23,173,284	1.67
1947	73	17,850,165	17,768,010	32,359,835	1.82
1948	73	19,421,610	19,453,359	40,322,716	2.07
1949	78	21,266,590	20,940,562	46,091,687	2.20
Miscellaneous:[3]					
1945	11	409,131	420,483	822,651	1.96
1946	21	824,839	839,178	1,714,743	2.04
1947	20	861,905	879,059	2,140,570	2.44
1948	20	864,874	887,457	2,518,018	2.84
1949	24	762,159	752,744	2,277,212	3.03
GRAND TOTAL:					
1945	145	102,804,884	106,353,595	173,337,010	1.63
1946	153	164,064,188	169,567,593	292,396,343	1.72
1947	150	186,519,347	187,491,869	356,213,976	1.90
1948	150	205,448,263	204,304,662	445,678,073	2.18
1949	150	209,727,417	206,080,325	473,177,032	2.30

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[1] Including Puerto Rico and Hawaii.

[2] Figures reported separately for the first time in 1945.

[3] Includes hydroplastic, plastic, and waterproofed cements.

Natural, masonry (natural), and puzzolan (slag-lime) cements produced, shipped, and in stock at mills in the United States, 1945-49

Year	Production		Shipments		Stocks on Dec. 31
	Active plants	Barrels (376 pounds)	Barrels (376 pounds)	Value	Barrels (376 pounds)
1945	9	1,483,763	1,479,513	$2,093,848	170,324
1946	9	2,474,674	2,533,106	4,155,171	112,031
1947	9	2,951,098	2,927,885	5,764,398	145,408
1948	9	3,440,248	3,375,135	7,734,289	1/209,901
1949	9	3,185,229	3,233,525	8,006,361	2/161,605

1/ Revised figure.
2/ Subject to revision.

Hydraulic cement exported from the United States, 1947-49, by countries

(U. S. Department of Commerce)

Country	1947		1948		1949	
	Barrels	Value	Barrels	Value	Barrels	Value
North America:						
Bermuda	12,712	$37,443	634	$2,998	25	$110
Canada	1,100,559	3,558,874	907,400	3,416,965	1,505,976	5,080,765
Newfoundland - Labrador	53,406	143,773	1,145	4,107	1,550	3,900
Central America:						
British Honduras	3,425	16,594	250	950	1,050	4,523
Canal Zone	332,509	883,943	108,045	333,431	36,293	90,500
Costa Rica	120,716	362,731	72,599	235,924	43,187	155,430
El Salvador	138,911	481,106	47,441	169,578	33,594	136,713
Guatemala	27,623	87,893	26,224	93,942	26,656	100,385
Honduras	97,365	329,996	62,752	210,099	80,200	277,092
Nicaragua	12,696	41,414	9,452	40,225	6,167	24,804
Panama	253,512	822,452	82,379	299,747	2,059	13,532
Mexico	481,961	1,681,811	158,623	577,995	126,381	490,670
West Indies:						
British:						
Bahamas	20,185	73,357	10,085	40,396	11,365	47,118
Barbados	7,642	16,573	108	324	—	—
Jamaica	12,907	42,376	3,508	14,180	495	1,930
Leeward and Windward Islands	—	—	4,783	16,481	485	1,845
Trinidad and Tobago	68,300	198,187	20,375	63,510	1,927	8,253
Cuba	518,339	1,682,314	398,529	1,421,288	296,246	980,613
Dominican Republic	352,458	1,066,324	215,462	752,212	62,963	247,905
French West Indies	60,238	175,129	3,232	10,480	2,963	10,608
Haiti	32,277	98,639	15,757	57,193	27,058	99,909
Netherlands Antilles	36,516	115,191	137,746	470,736	78,404	259,116
Other North America	1,000	4,600	250	719	—	—
Total (North America)	3,745,257	$11,920,720	2,286,779	$8,233,480	2,345,044	$8,035,721

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	(Barrels)	(Value)	(Barrels)	(Value)	(Barrels)	(Value)
South America:						
Argentina	14,287	$77,095	4,455	$40,141	953	$1,721
Bolivia	1,880	12,907	1,546	14,393	90	694
Brazil	403,333	1,462,542	493,622	1,890,808	33,021	187,209
Chile	3,192	24,955	8,910	59,120	2,591	21,593
Colombia	337,544	1,382,666	113,195	478,302	54,453	332,329
Ecuador	85,361	255,399	9,888	34,730	61,945	221,563
Paraguay	3,960	14,125	332	2,532	2,488	13,726
Peru	91,699	257,239	21,629	74,924	3,057	18,450
Surinam	6,181	17,363	3,328	10,698	8,525	27,257
Uruguay	2,711	17,561	1,327	9,348	472	4,044
Venezuela	1,600,581	4,908,461	2,020,617	6,822,478	1,751,951	6,072,034
Other South America	5,419	17,859	68	301	75	994
Total (South America)	2,556,148	$8,448,172	2,678,917	$9,437,775	1,919,621	$6,901,614
Europe:						
France	---	---	465	5,763	829	4,264
Norway	---	---	---	---	24	385
Portugal	461	2,737	---	---	---	---
U.S.S.R	751	7,242	---	---	---	---
United Kingdom	554	3,802	190	1,476	---	---
Other Europe	387	2,531	1,253	12,609	499	5,973
Total (Europe)	2,153	$16,312	1,908	$19,848	1,352	$10,622
Asia:						
Bahrein	1,639	5,679	1,900	15,284	4,401	26,903
Ceylon	78,170	227,971	21,649	70,111	150	992
China	3,981	19,938	125	323	---	---
French Indochina	380	1,024	689	15,848	---	---
Hong Kong	5,901	19,168	1,750	5,198	---	---
India	13,287	57,812	---	---	17	400
Indonesia	17,087	43,760	71,381	226,380	80,075	254,534
Japan	259	770	---	---	44,633	143,116
Korea	(1)	(1)	162,503	527,291	61,843	201,592
Kuwait	37,922	112,421	36,895	134,577	9,320	42,655
Philippines	152,117	470,590	400,397	1,321,795	17,873	70,381
Saudi Arabia	77,308	237,107	117,417	454,729	47,682	153,131
Syria	1,461	6,352	---	---	---	---
Turkey	901	7,571	---	---	479	1,259
Other Asia	543	1,685	4,501	16,301	2,069	17,721
Total (Asia)	1/390,956	1/$1,211,848	819,207	$2,787,837	268,542	$912,684

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	(Barrels)	(Value)	(Barrels)	(Value)	(Barrels)	(Value)
Africa:						
Egypt	167	$1,550	400	$3,144	---	---
Ethiopia	1,750	4,908	---	---	750	$2,580
French West Africa	1,297	3,320	1,678	5,318	6,731	21,584
Liberia	11,575	30,940	4,231	14,694	1,250	4,344
Madagascar	---	---	65,349	189,369	---	---
Mozambique	7,064	25,807	12,238	43,446	---	---
Nigeria	1,786	4,536	1,440	4,714	4,915	16,419
Portuguese Guinea and Angola	20,036	55,135	4,987	20,032	---	---
Southern Rhodesia	1,325	8,200	---	---	---	---
Union of South Africa	17,849	55,524	19,600	71,762	2,005	9,065
Other Africa	1,292	3,756	5,897	20,266	670	2,393
Total (Africa)	64,141	$193,676	115,820	$372,745	16,321	$56,385
Oceania:						
French Pacific Islands	1,796	5,804	14,825	49,746	4,036	14,934
New Zealand	10,783	30,095	3,782	12,746	4,198	17,922
Other Oceania	16	91	925	2,999	2,785	11,072
Total (Oceania)	12,595	$35,990	19,532	$65,491	11,019	$43,928
GRAND TOTAL	1/6,771,250	1/$21,826,718	5,922,163	$20,917,176	4,561,899	$15,960,954

1/ Exclusive of 198,723 barrels, valued at $839,916, exported to Korea under the Army Civilian Supply Program.

Roman, portland, and other hydraulic cement imported for consumption in the United States, 1947-49, by countries[1]

(U. S. Department of Commerce)

Country	1947		1948		1949	
	Barrels	Value	Barrels	Value	Barrels	Value
Belgium-Luxembourg-----	---	---	104,937	$261,927	37,412	$90,767
Bulgaria---------------	---	---	17	56	---	---
Canada-----------------	334	$1,078	3,030	14,109	639	2,162
Dominican Republic-----	---	---	---	---	1,516	7,260
Germany----------------	---	---	---	---	26,620	75,000
Mexico-----------------	---	---	149,990	397,705	16,017	40,722
Norway-----------------	---	---	---	---	11,750	32,853
United Kingdom---------	4,272	27,590	24,655	110,605	15,832	81,063
Total-------------	4,606	$28,668	282,629	$784,402	109,786	$329,827

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[1] Excludes "white, nonstaining, and other special cement."

Hydraulic cement shipped to noncontiguous Territories of the United States, 1947-49

(U. S. Department of Commerce)

Territory	1947		1948		1949	
	Barrels	Value	Barrels	Value	Barrels	Value
Alaska	53,424	$140,051	(1)	(1)	(1)	(1)
American Samoa	25	90	495	$1,621	436	$1,687
Guam	2,937	8,798	4,467	18,330	2,189	10,510
Hawaii	547,184	1,106,942	(1)	(1)	(1)	(1)
Puerto Rico	16,005	78,184	14,964	91,313	94,955	315,311
Virgin Islands	17,360	56,196	28,071	103,647	31,074	123,471
Wake Island	---	---	630	2,757	83	359

1/ Figure not available.

Hydraulic cement exported from the United States, 1945-49

(U. S. Department of Commerce)

Year	Barrels	Value	Percent of total shipments from mills
1945	6,474,721	15,567,490	6.0
1946	5,163,362	13,484,933	3.0
1947	1/6,771,250	1/21,826,718	1/3.6
1948	5,922,163	20,917,176	2.9
1949	4,561,899	15,960,954	2.2

1/ Exclusive of 198,723 barrels, valued at $839,916 exported under the Army Civilian Supply Program.

Hydraulic cement imported for consumption in the United States, 1945-49

(U. S. Department of Commerce)

Year	Barrels	Value	Year	Barrels	Value
1945	323	$700	1948	1/282,752	$785,120
1946	3,734	15,531	1949	109,821	329,969
1947	4,606	28,668			

1/ Revised figure.

Detailed statistics on the hydraulic cement industries will be presented in the "CEMENT" chapter of Minerals Yearbook 1949 and will be available from the Superintendent of Documents, United States Department of the Interior, Washington 25, D. C., at a date to be announced later.